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ABSTRACT

The two books, the leader's manual and the members' manual address one environmental problem people come into contact with on a daily basis: potentially hazardous household products. The purpose of the books is to educate community groups about hazardous materials. The member's manual shares information about hazardous items and provides facts to let the user decide what to do about them. In the two manuals, information and activities are presented in five sections about: (1) what hazardous household products are and where they are found in the home; (2) health risks hazardous products pose to people; (3) the issue concerning disposing of hazardous materials; (4) non-hazardous alternatives; and (5) activities to evaluate the members' expertise about hazardous materials. The leader's manual has a reduced version of each page from the members' manual. In the margin are tips and information bullets to assist the leader in implementing the activities. The members' manual presents 32 learning activities. (MDH)

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ED 370 792

THE HAZARD HOUSE WORKBOOK

A WORKBOOK ABOUT HOUSEHOLD CHEMICALS

LEADER'S MANUAL

SE 054 468

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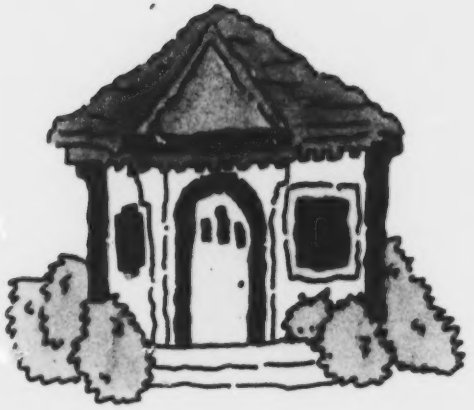
THE HAZARD HOUSE WORKBOOK



A WORKBOOK ABOUT HOUSEHOLD CHEMICALS

LEADER'S MANUAL

To obtain additional copies of this document, please contact Melinda J. Fox, Public Education Coordinator at the Department of Toxic Substances Control by writing to: Department of Toxic Substances Control, P.O. Box 806, Sacramento, CA 95812-0806
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DEAR LEADER:

People of all ages are becoming very concerned about environmental issues. This book will address one environmental topic that we all interact with daily: potentially hazardous household products.

Did you know that antifreeze, oven cleaners, thinners, pesticides, toilet cleaners and polishes all contain ingredients that can be called hazardous? Most of these products, if used and stored according to manufacturer's directions, are safe and cause little concern. However, if these products are handled improperly, or disposed of incorrectly, they may be potentially harmful. This activity book will guide you and your members through the associated risks and related safety tips for these common products.

HOW TO USE THIS BOOK

Please use this book to best suit your needs. Each section focuses on one key concept or purpose. Follow the sections in sequence, choosing the activities appropriate for your group's needs and abilities. You are not expected to complete all the activities, the choice is yours.

The Leader's Manual has a reduced version of each page from the Members Manual. In the margin are tips and information bullets to assist you, as the leader, in implementing the activities.

We have left it up to your discretion as to how many activities are required for an award. Since this book has been prepared for a variety of youth organizations and each organization has it's own award system, we chose to let you dictate the specific requirements for your members. If your program is such that members complete activities independently, then members can guide themselves through the activities and complete the work in their manuals. For a greater understanding of the material, leaders and members can work together at meetings with follow-up work done at home by the members.

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SECTION

1

HOUSEHOLD HAZARDOUS PRODUCTS

PURPOSE

Develop awareness of potentially hazardous products that are commonly used in and around the house.

OBJECTIVE

The member will be able to:

1. Define "**HAZARDOUS**."
2. Give examples of hazardous products.
3. Identify "signal" words that indicate potential harm; and
4. Locate places in the home where these products are usually stored.

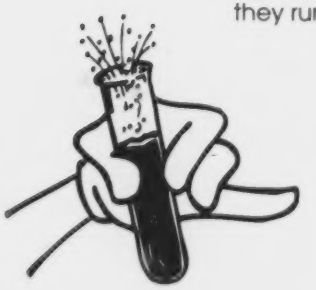
MATERIALS

Common household products with legible labels, paper, pens, scissors.

LEADER TIPS

1. To introduce this section, ask the member what "hazardous" means. Explain that there are laws that regulate hazardous materials and hazardous wastes. See the next page entitled HAZARDOUS WASTE. Elaborate on the definition using the four criteria.

2. Ask the members for examples of items that meet the hazardous criteria . Use the following for examples when they run out of ideas:



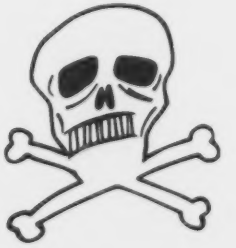
IGNITABLE: paints, thinners, solvents, adhesives, rubber cement, wood preservatives, aerosols, hair spray, and floor and furniture polishes.

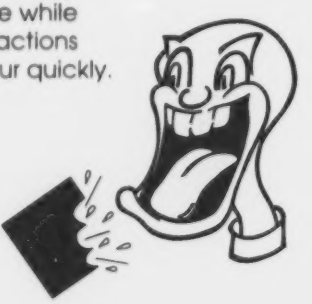
CORROSIVE: bleach cleaners, pool chemicals, powder or abrasive cleaners, car batteries, silver polish, and oven, drain and toilet cleaners.

REACTIVE: any bleach cleaner mixed with an ammonia product will produce a deadly gas. More commonly seen in industry, chromic acids, copper stripping and aluminum anodizing wastes, wastes from dry cell batteries, and ink and dye manufacturing wastes are all reactive.

TOXIC: brake fluid, used car oil, car batteries, silver polish, oven, drain and toilet cleaners, mothballs, paints, fungicides, insecticides, herbicides, fertilizers, flea collars, roach and ant killer, rat and mouse poison, and medicines.

3. Describe to your members the difference between toxic and poisonous. Toxic reactions can occur immediately or over a long period of time while poisonous reactions typically occur quickly.





HAZARDOUS WASTE

The California Department of Health Services (DHS) regulates any entity that generates, treats, stores, transports and disposes of hazardous waste. Even though many common products around the home have ingredients in them that meet the definition of hazardous, these household items are currently exempted from the regulations. But, when these same items are thrown away, they become hazardous waste; and they can cause damage to people, animals and the environment if not used and disposed of correctly.

For more information regarding hazardous waste you may want to refer to these documents:

The definition of hazardous waste is listed in the **Health and Safety Code, Section 25117**. It reads "hazardous waste is defined as a waste or combination of wastes which, because of its quantity, concentration, or physical, chemical, or infectious characteristics may either:

1. Cause, or significantly contribute to an increase in the death rate or an increase in serious irreversible or incapacitating reversible illness; or

2. Pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, disposed of or otherwise managed."

The **California Code of Regulations, Title 22** contains more information regarding hazardous materials and wastes. It has a list of over 700 materials and wastes that are hazardous. It also describes the four criteria regarding hazardous (ignitable, corrosive, reactive, toxic).

The federal government defines a hazardous substance as any substance or mixture of substances which is toxic, corrosive, an irritant, flammable or combustible, a strong sensitizer, generates pressure, is radioactive, or can cause substantial personal injury or illness. California actually has stricter and more comprehensive regulations regarding what is hazardous than the federal government.

LEADER TIP

HAZARDOUS HOUSEHOLD PRODUCTS

Read this introductory page together.

SECTION

1

HAZARDOUS HOUSEHOLD PRODUCTS

What Are They?

Where Can They Be Found?

Many of the products found in and around your home, such as cleaners, furniture polish, garden items, paint, medicines and auto products, can be hazardous to you if used in the wrong way. This first section will help you understand what hazardous household products are and where they can be found.

1

WHAT DOES HAZARDOUS MEAN?

The word **HAZARDOUS** means that the chance of being injured or harmed is present. Hazardous things can make people, animals, or the environment sick.

There are four ways to tell if something is hazardous. If something is ignitable, corrosive, reactive or toxic, it can be hazardous.

Ignitable

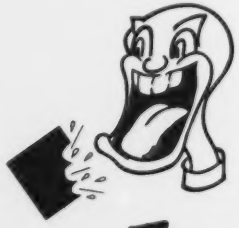
Can catch on fire easily.

Reactive

Can catch on fire, explode or give off dangerous fumes when exposed to water or air.

Corrosive

Can burn the eyes and skin or eat away containers.



Toxic

Can make you sick immediately or over a period of time.

LEADER TIP

WHAT DOES HAZARDOUS MEAN?

Read the definitions of hazardous as a group. Ask members for examples of what might be hazardous. Refer to page 2 of the Leader's Manual for additional suggestions

LEADER TIP

WHAT IS IT?

Discuss what a hazardous household product is with your members.

WHAT IS A HAZARDOUS HOUSEHOLD PRODUCT?

A hazardous household product is just what the name says - it is a product in your house that can be hazardous. Some common items are toilet bowl cleaners, weed killers, bleach, oil, anti-freeze and oven cleaners. If these items are used, stored or disposed of improperly, you, your pets or the environment can be injured.

section 1 3

LOOK WHAT'S HAZARDOUS

The following is a list of some hazardous household products that you may find around your house. Can you think of other hazardous household products not mentioned? If so, add them to the list.

- Pet Flea Collars
- Toilet Bowl Cleaners
- Slug Bait
- Laundry Detergent
- Weed Killer
- Oil
- Antifreeze
- Brake Fluid
- Paint
- Room Deodorizers
- Oven Cleaners
- Glass Cleaners
- Furniture Polish
- Paint Strippers
- Medicines
- Pool Acids
- Bubble Bath
- Floor Polish
- Charcoal Lighter

LEADER TIP

LOOK WHAT'S HAZARDOUS

Brainstorm with your members what they think is hazardous in their home, garage, pool shed, and laundry room. Do a survey by hand how many members have the items listed on page four of the Members Manual.

ACTIVITY 1

HAZARD DETECTIVE

Lead your members through this exercise verbally and/or have them complete the map at home. Depending on the age of your member, stress whether participation by an adult is mandatory.

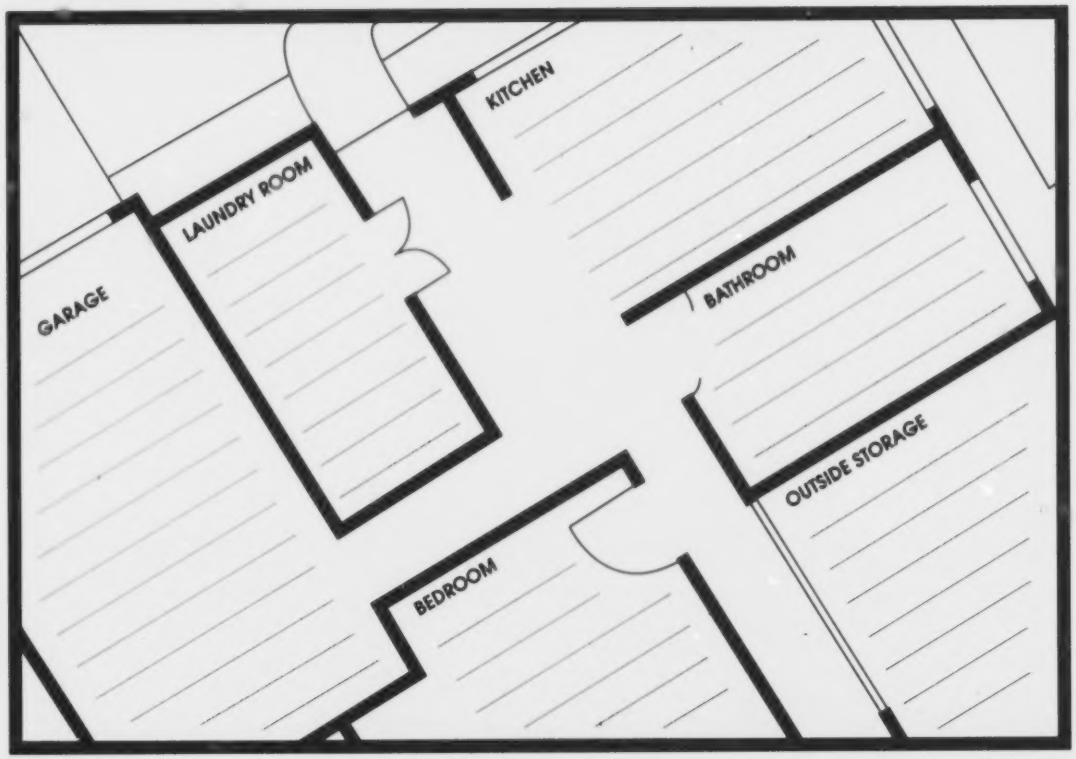
BE A HAZARD DETECTIVE

Inspect your household for hazardous household products. Fill in the map on the following page where they are located. Be sure to look in any storage areas, sheds or garages that may be part of your house. Now go inspect.

ACTIVITY 1

section 1 5

ACTIVITY 1



ACTIVITY 1

HAZARD DETECTIVE

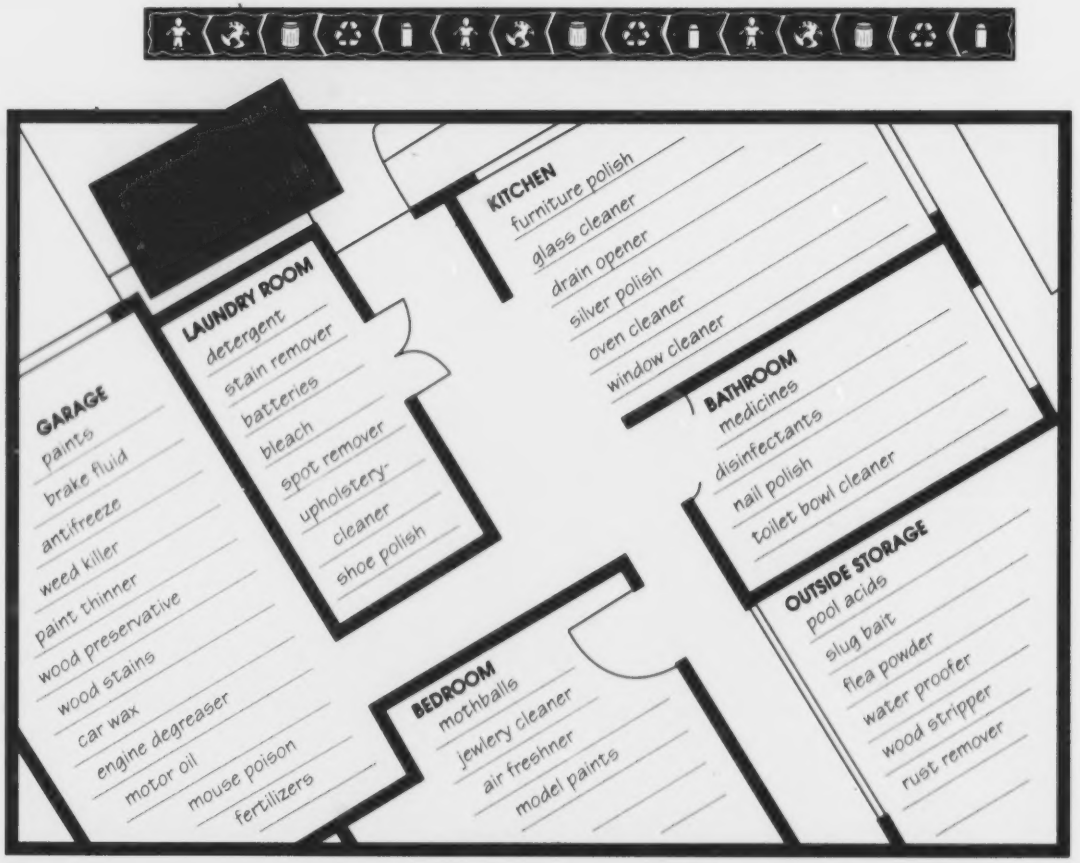
Some items that your members may not be aware of are:

Watch batteries:
Mercury
Cosmetics:
Iron oxides, polyvinyl-pyrrolidone
Nail polish:
Acetone, toluene
Shoe polish:
Nitrobenzene, trichloroethylene, methylene chloride
Ceramics:
Clays with silica, glazes with heavy metals
Jewelry making:
Silver solder often has cadmium
Hair spray:
Vinyl acetate polymer

ACTIVITY 2

HAZARD DETECTIVE

You can have your members tally the number of items found per room, find the average number of products per household or find the room with the greatest number of products stored in it.



ACTIVITY 2

section 1 7

READ THE LABEL

Label reading is a good way to see the benefits and the possible dangers of a product. A variety of signal words are used to alert the user to potential dangers. The following list shows the many words you can find on labels.

CAUTION - Be careful. The product should be used with care.

WARNING - It implies a stronger risk than caution. Use with added care.

DANGER - Exposure or unsafe use may cause injury, illness or death.

POISON - A substance that, through its chemical action, usually kills, injures or impairs a living thing quickly.

TOXIC - Similar to poison, but injury can occur quickly or over a long period of time.

HARMFUL - Can cause injury or damage.

FLAMMABLE - Easily set on fire, will burn quickly.

SKULL & CROSS-BONES - Danger. May cause injury, illness or death.

LEADER TIP

READ THE LABEL

Ask your members "What will help us in determining whether or not a product can be hazardous? What made you decide to list items on your maps?" If no one mentions "the product label", then suggest the answer. Discuss the various "signal words" that appear on some labels.

ACTIVITY 3

WORD SEARCH

Your members can complete this activity at home or at the meeting. It can be done individually or in pairs.

WORD SEARCH

Labels on packages tell you if something is safe or dangerous to handle. Here is a list of words you might find on a label. Try to find them in the word search puzzle!

C	O	R	R	O	S	I	V	E	M	T	P	L	N	G	J
A	S	O	B	N	L	X	E	S	D	O	P	K	I	B	N
U	U	B	X	P	O	I	S	O	N	X	T	G	N	C	E
T	O	I	O	K	M	G	H	P	O	I	L	A	B	E	L
I	D	P	L	M	C	D	E	T	T	C	W	R	T	V	G
O	R	A	F	L	A	M	M	A	B	L	E	X	P	I	O
N	A	I	N	G	R	E	D	I	E	N	T	S	B	O	O
W	Z	L	T	G	G	H	A	R	M	F	U	L	Q	W	E
P	A	T	N	B	E	W	A	R	N	I	N	G	O	I	K
T	H	O	M	N	C	R	P	E	R	T	U	V	I	L	M

CAUTION
CORROSIVE
DANGER
FLAMMABLE
HARMFUL
HAZARDOUS
INGREDIENTS
LABEL
POISON
TOXIC
WARNING

ACTIVITY 3

ACTIVITY 4

HAZARD STICKERS

Design a sticker that you can put on all the hazardous household products in your house. It can look like any of the examples you see here or whatever you think will be effective in warning people that these products are hazardous.

10 section 1

ACTIVITY 4

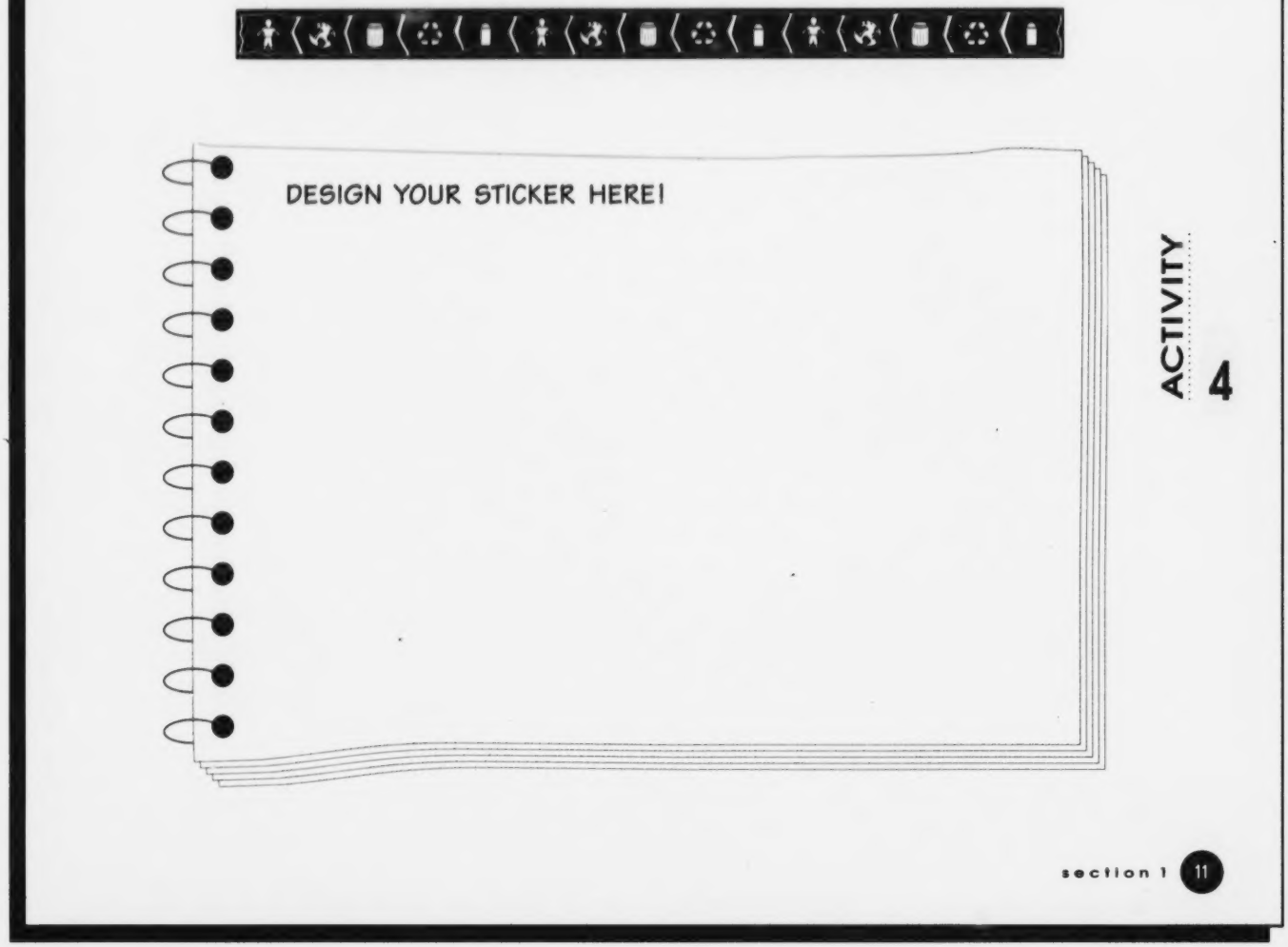
HAZARD STICKERS

Help your members design a sticker to be used on all potentially hazardous household products that they have located in their home.

ACTIVITY 4

HAZARD STICKERS

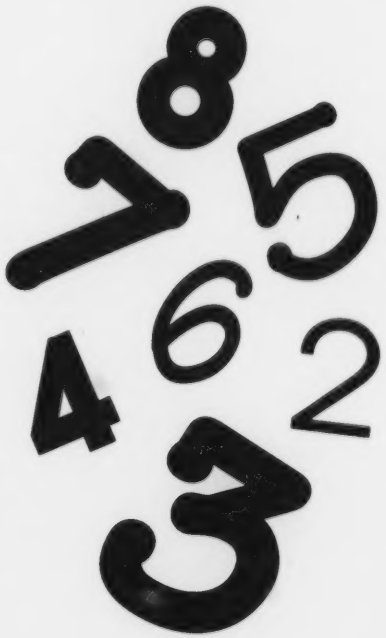
Have the members design the stickers in the workbook or provide construction paper, colored pens and scissors. Have members produce the number of stickers they need. If you have access to a photocopier, you may consider reproducing the stickers for the members and letting them color them at the following meeting.



ACTIVITY 5

DO THE COUNT

Count the number of household products on your list from Activity 1, page 6. Draw as many stickers as you need. Color them and cut them out. Tape or glue them onto the hazardous household products that you located. Don't cover up the labels already on the containers!



ACTIVITY 5

DO THE COUNT

Tally the number of products each member listed on their maps. Each member can create a number of stickers equal to the number of hazardous products at home. Instruct the members to place the stickers on the products when they go home with the assistance of an adult.

LEADER TIP

GOOD LABEL?

As a group, read the information regarding labels in the Members Manual. Encourage discussion among members why label reading is a good idea.

GOOD LABEL? BAD LABEL?

A good informative label should include the following:

1. A signal word such as "danger", "warning" or "caution" depending on the level of danger. This should appear on the front label.
2. A description of the hazard, such as "vapor-harmful", "flammable", etc. This should also appear on the front label.
3. A statement that warns users how to avoid the hazard. Example: "Use in a well ventilated area".
4. A common or chemical name for the hazardous substance.
5. Instructions for safe use and handling.
6. First aid instructions.
7. The name and location of the manufacturer, distributor or repacker.
8. The statement, "Keep Out of Reach of Children", or its equivalent.

section 1 13

ACTIVITY 6

YOU BE THE JUDGE

Review the 2 examples of product labels. Does each label have all the warnings that it should? Go back to page 13 to see what an informative label should include. Fill in what's missing in the blanks.

This product label is missing two requirements. What are they?

1. **Name and location of the manufacturer, distributor or repacker**

2. **Statement "keep out of the reach of children" or its equivalent**

CAUTION:
Eye Irritant
Use with gloves and eye protection.
May be irritating to the eyes upon direct contact. In case of eye contact, immediately flush eyes with water for at least 15 minutes. Call physician if swallowed. Drink a glass full of water.
Ingredients: Water, ammonia, vinegar and coloring.

ACTIVITY 6

YOU BE THE JUDGE

Assist your members in completing the activity.

ACTIVITY 6

YOU BE THE JUDGE

This product label is missing two requirements. What are they?

1. **How to avoid hazards (wear gloves, use in well ventilated area)**

2. **Signal word**

DANGER:
KEEP OUT OF REACH OF CHILDREN. CAN CAUSE BURNS ON CONTACT. HARMFUL IF SWALLOWED.
FIRST AID: EYES: Rinse eyes immediately with water. SWALLOWED: Rinse mouth. Drink a glass of water or milk. Do not induce vomiting. SKIN: Remove affected clothing, flush skin with water.
Ingredients: Contains 1.7% sodium hydroxide and 6% sodium hypochlorite.
An ACME product. ACME PRODUCTS, Acme, Anywhere 99999.

ACTIVITY 6

ACTIVITY 7

WHAT HAVE WE LEARNED?

Answer the following questions about this section. Tally your answers and review the questions you missed. How did you do?

1. Give three examples of hazardous household products.
   a) **See the map on page 7 of the Members**
   b) **Manual and page 10 of the Leader's**
   c) **Manual for examples.**

2. Name three examples of signal words used on labels of hazardous household products.
   a) **Caution** **Poison** **Toxic**
   b) **Warning** **Harmful** **Flammable**
   c) **Danger** **Skull & crossbones graphic**

3. TRUE OR FALSE? Headaches, sleepiness and dizziness may be signs of overexposure to hazardous chemicals.
   True

4. TRUE OR FALSE? Something is hazardous if it is toxic, flammable, corrosive or ignitable.
   True

5. TRUE OR FALSE? Something is hazardous if it can harm you, your pets or the environment.
   True

ACTIVITY 7

REVIEW

Help your members complete this first "quiz". There is more than one right answer for questions 1 and 2. For more information regarding common products, their related health hazards and precautions, see Appendix A. You can create your own set of questions from Appendix A or simply use it for discussion purposes.

SECTION

2

IS YOUR HEALTH SAFE?

PURPOSE

Develop awareness that unsafe use of hazardous household products can have a harmful effect on health.

OBJECTIVE

The member will be able to:

1. Describe the three ways hazardous chemicals can enter the body.
2. Describe safety rules that should be followed when using hazardous products.
3. Respond in the case of a poisoning or contact with a hazardous product.

MATERIALS

Apple, glass of water, balloon, sample household product, telephone books.

SECTION

2

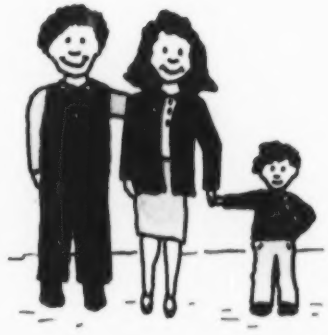
IS YOUR HEALTH SAFE?

Routes of Exposure

Do The Safety Rules

Who Can Help?

Many hazardous household products can harm people if used incorrectly. This section will show you how the human body can be affected by chemicals. You will also learn what safety rules you should follow when using hazardous household products.



17

50

51

LEADER TIP

Read this introductory page together to see what's coming up.

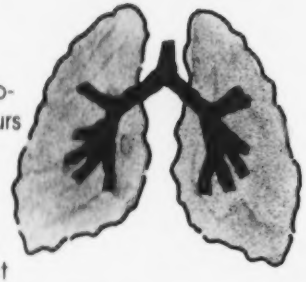
LEADER TIP

ARE YOU EXPOSED?

Introduce this section by placing an apple, a glass of water, an air filled balloon and a sample household product on the table. Ask the members how each item can enter the body. Encourage discussion and look for the following understanding (apple = ingestion; water = ingestion; balloon = inhalation; sample product = dermal contact if it spills on the skin, inhalation if it is sprayed and ingestion if it is swallowed. The answer will depend on what the sample product is.)

ARE YOU EXPOSED ?

Chemical exposure is what occurs when a living organism (you, a family member, or your pet) comes in contact with a chemical. A person cannot be affected unless the chemical is taken into the body. There are three ways that hazardous substances can get into the body and cause harm:



Inhalation
(breathing)

Ingestion
(eating or drinking)

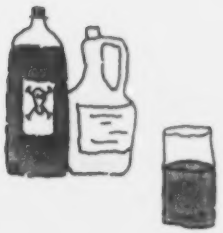
Dermal Absorption
(skin contact)

18 section 2

WHICH WAY COULD THE BODY BE AFFECTED BY HAZARDOUS MATERIALS?
(Fill in the blanks)

ACTIVITY 1

Inhalation



Ingestion

Dermal absorption

section 2 19

ACTIVITY 1

HEALTH EFFECTS

Assist your members in filling in the blanks. Does the group reach consensus on the answers?

LEADER TIP

ACUTE OR CHRONIC

Read the information regarding acute or chronic health effects together as a group. Encourage discussion of experiences at home regarding poisonings and accidents with household items.

ACUTE OR CHRONIC

Effects of chemicals can be acute or chronic. An acute effect shows up shortly after a single large exposure to a chemical. An example would be a child drinking a large amount of drain opener. The substances in drain opener (called lye or sodium hydroxide) is very corrosive to body tissue and can cause burns. Once ingested, it will eat away at anything it touches - mouth, face, esophagus, etc. Chronic health effects are those which only show up after repeated exposures to substances. For example, pesticides often contain arsenic. If a person sprays pesticides regularly for many years, and comes into contact continually with the pesticide spray, the chronic health effects can include lung cancer and nervous system problems.

20 section 2

MATCH THE DEFINITION WITH THE APPROPRIATE WORD

a. acute
b. ingestion
c. chronic
d. inhalation
e. dermal contact

ACTIVITY 2

b Refers to eating or drinking something

c An effect caused by repeated exposures to a chemical

e Absorbing chemicals through the skin

a An effect after a short term, large exposure to a chemical

d Breathing a chemical or hazardous material into the lungs

section 2 21

58

ACTIVITY 2

MATCH UP

Assist your members in completing the match up game. Review the definitions together.

59

LEADER TIP

SAFETY RULES

Discuss the safety rules with your members. Ask them to provide examples of what could go wrong if some of them were not followed.

DO THE SAFETY RULES

The following is a list of precautions (safety rules) that should be followed when using hazardous household products. Does your family follow these rules when using these items?

1. Read all labels carefully.
2. Do not mix products.
3. Use only in well ventilated areas.
4. Keep containers tightly closed.
5. Keep products away from children and pets.
6. Wear protective clothing (long sleeve shirts, gloves).
7. Clean up area after use.
8. Dispose of contents and/or containers in an appropriate manner.
9. Avoid aerosols.
10. Buy the least hazardous product (or choose a safer substitute).
11. Buy only the amount you need.
12. Know the number of the local poison control center.
13. Never put products in a different container.

WHAT SAFETY RULE IS BEING IGNORED?

(Fill in the blank below)

ACTIVITY 3

Never put products in a different container

section 2 23

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ACTIVITY 3

SAFETY RULES

Fill in the blanks

63

ACTIVITY 3

SAFETY RULES

Fill in the blanks

ACTIVITY 3

WHAT SAFETY RULE IS BEING IGNORED?

(Fill in the blank below)

Use only in well ventilated areas.

ACTIVITY 3

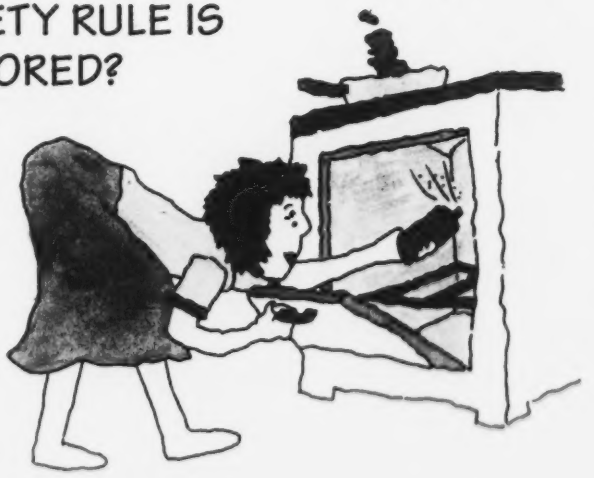
SAFETY RULES

Fill in the blanks

ACTIVITY 3

WHAT SAFETY RULE IS BEING IGNORED?

(Fill in the blank below)



Wear protective clothing (long sleeves, gloves, etc.).
Avoid aerosols, especially by a heat source!

section 2 25

LEADER TIP

BE PREPARED

Call your local Poison Control Center and ask them some basic questions regarding who they are and what they do. Also, ask Center Personnel the questions on page 28 of the Members Manual. Document their telephone numbers (one for information, one for emergencies).

WHEN IT COMES TO HOUSEHOLD HAZARDOUS PRODUCTS, BE PREPARED

GET READY! Someday you may be in an emergency when someone nas been injured by hazardous substances. The most current information on how to handle this kind of problem is at your local Poison Control Center or your local Health Department. Look in the front of your telephone book for the telephone numbers.

Poison Control Centers are often inside your local hospitals. They are staffed with experts who can answer questions about hazardous substances and poisoning, treatment and prevention. They usually have different telephone numbers for emergencies and general questions.

EMERGENCY !

W hat is the emergency telephone number for your local Poison Control Center? Post this number near your telephone and in areas where household products are stored.

Fill in the phone # here_____

ACTIVITY 4

LEADER TIP

EMERGENCY!

Help your members locate the correct telephone numbers in the white pages.

ACTIVITY 5

POISON CONTROL CENTER

You may wish to arrange for a Poison Control Center guest speaker or a tour of the Poison Control Center. If not, have members complete the 4 questions by contacting the Poison Control Center by telephone from home or elect one member at the meeting to place the call.

ACTIVITY 5

FIND OUT ABOUT YOUR LOCAL POISON CONTROL CENTER

USING THE NON-EMERGENCY NUMBER, call the local Poison Control Center. Do the following...

1. Identify yourself and what youth group you belong to.
2. Ask what steps should be followed if someone comes in contact with hazardous chemicals.
3. Ask what should be included in a home first-aid kit that could help in an emergency with hazardous products.
4. Thank the person for their time and information.

WHAT'S WRONG WITH THESE PICTURES?

The next three pages will show you situations that are potentially dangerous. Fill in the blanks below each picture. Describe what can go wrong. What is hazardous in each picture?

ACTIVITY 6

ACTIVITY 6

WHAT'S WRONG?

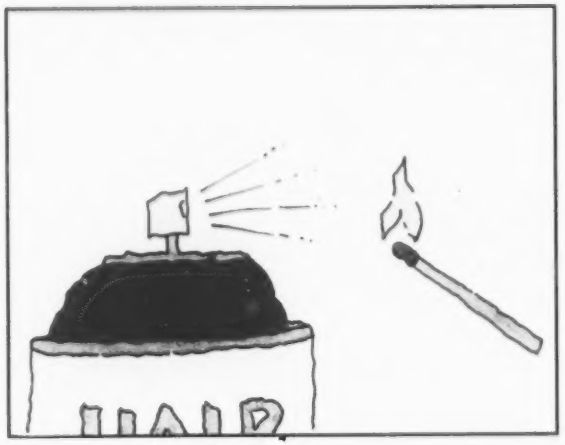
Complete this activity as a group and encourage discusssion about what can go wrong (and what is hazardous) in each scenario.

ACTIVITY 6

WHAT'S WRONG?

ACTIVITY 6

#1

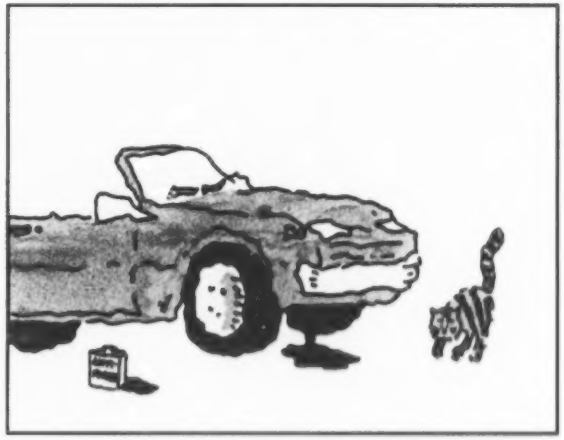


An aerosol can may explode if near a heat source. This can cause injury to anyone close by.

ACTIVITY 6

WHAT'S WRONG?

#2



Antifreeze is very sweet smelling and a pet will drink it if possible. This can kill a small pet.

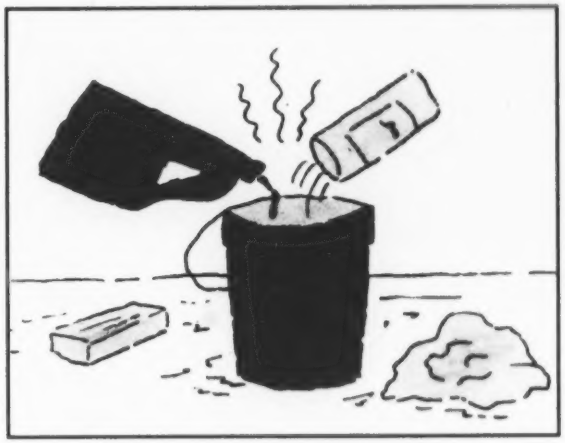
ACTIVITY 6

ACTIVITY 6

WHAT'S WRONG?

ACTIVITY 6

#3



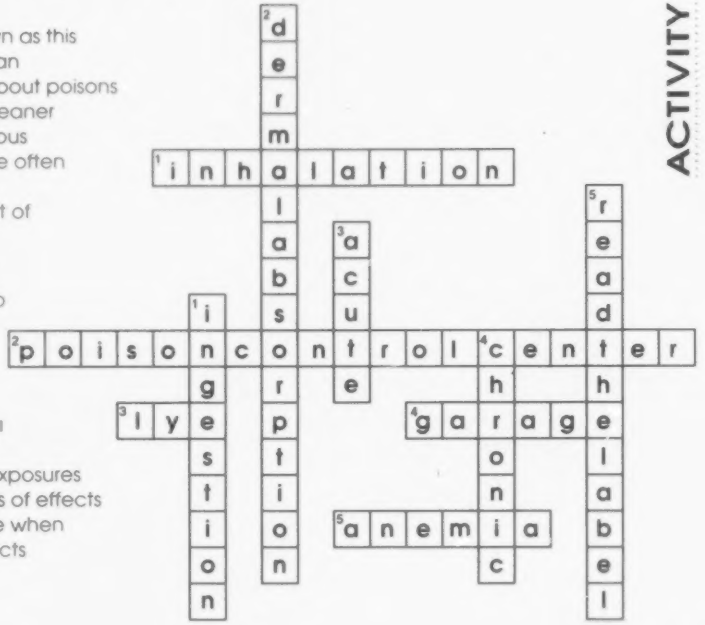
One should never mix chemicals because they might be incompatible. They could explode, cause an invisible gas or produce a deadly odor.

COMPLETE THE CROSSWORD!

ACTIVITY 7

ACROSS
1. To breathe is also known as this
2. An organization that can give you information about poisons
3. A substance in drain cleaner
4. A place where hazardous household products are often stored
5. A possible health effect of rug cleaners

DOWN
1. Eating or drinking is also called this
2. Skin contact is also known as this
3. A type of effect that shows up shortly after a single, large exposure
4. Numerous, repeated exposures can result in these kinds of effects
5. Number one safety rule when using household products



ACTIVITY 7

COMPLETE THE CROSSWORD

Have members complete the crossword at home; do it as a group effort or make it a contest.

ACTIVITY 7

COMPLETE THE CROSS-WORD

Depending on the age of your members, let them use these words to fill in the blanks.

USE THESE WORDS FOR THE CROSSWORD PUZZLE:

acute
anemia
chronic
dermal absorption
garage
inhalation
ingestion
lye
poison control center
read the label

SECTION

3

TO THROW OR NOT TO THROW?

PURPOSE

Develop awareness that unsafe disposal of hazardous household products may adversely affect the environment.

OBJECTIVE

The member will be able to:

1. Describe common disposal methods.
2. Describe associated problems with disposal methods.
3. Implement techniques to lessen what we throw away.
4. Identify agencies and organizations that deal with hazardous household products.

MATERIALS

Telephone books, glue, tape, magazines, newspapers, scissors, pens, pencils.

See page 41 for ideas on demonstations. These are optional materials.

LEADER TIP

Read this introductory page as a group to see what this section is about.

SECTION

3

TO THROW OR NOT TO THROW?

Disposal Methods

The Three R's

To dispose of something means to get rid of it or to throw it away. Some people dispose of hazardous products unsafely. This can hurt both humans and the environment. This section will help you understand correct and incorrect disposal methods, what can happen with these disposal methods, and, what groups exist to help you with these issues.

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LEADER TIP

DISPOSAL METHODS DEMONSTRATIONS

This section describes a variety of disposal methods for getting rid of waste. Members will learn about the effect these methods can have on both the environment and people.

After reading the following pages, ask the members to name some methods for disposing of household trash. Then, provide demonstrations for some of the disposal methods. Suggestions are:

BURIAL: Put sand, gravel or dirt in a strainer. Place the strainer over a jar. Pour colored water onto the material. Have the members note what happens.

BURNING: Place a **small** amount of nail polish on foil or in a bowl. Light a match to it carefully. Ensure that all members are at a safe distance. Have members note any reaction and odor.

STORING ITEMS: Place a cotton ball in colored water. Squeeze the cotton ball onto your skin or a member's skin (arm, wrist, hand, etc.) Have the members note what happens.

Provide any other examples that you are comfortable with. Encourage discussion in each case regarding "what would the scenario mean if hazardous products were involved?"

LEADER TIP

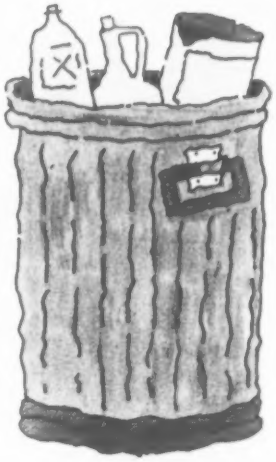
DISPOSAL METHODS

Page 36 of the Members Manual simply provides more introductory text.

COMMON DISPOSAL METHODS AND THEIR DAMAGING EFFECTS

People often dispose of waste by throwing it in the trash, burning it, storing it, or dumping it down the sink, toilet or storm drain. All of these methods can sometimes harm the environment and people.

The following pages describe various methods of disposal and the possible dangers they pose to people and the environment.



IN THE TRASH

Garbage collectors have been injured by household products when they have collected the trash. Sometimes items such as pool chemicals splash in their eyes and cause burning or blindness. Reactive products have resulted in fumes that sent workers to the hospital. Garbage usually goes to landfills or dumps. Workers at these places have been injured in the same way.

BURIAL

Products dumped on weeds or buried in a hole in the ground can sink into the soil and cause both soil and groundwater to be contaminated (dirtied).

LEADER TIP

COMMON DISPOSAL METHODS

As a group, discuss each disposal method and their ramifications. Ask your members "Why are we concerned with these disposal methods?"

You are hoping to solicit a response similar to: "because each can cause harm to the environment and to humans if done incorrectly."

BURNING

Burning products or wastes is also known as incineration. Incineration can sometimes result in air pollution. Many items are explosive and there are many stories of people being injured when they burn their garbage.

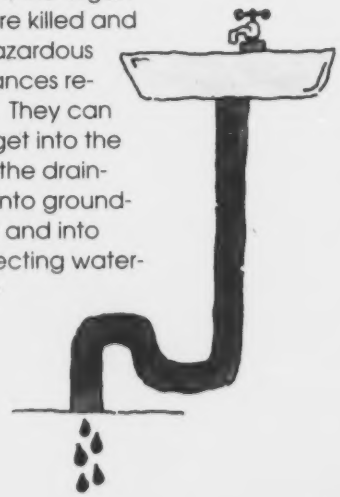
STORING ITEMS

Storing products indefinitely can be an invitation to an accident. Small children can be exposed to the products. Firefighters have been injured by a variety of household products when responding to fires.

DOWN THE SINK OR TOILET

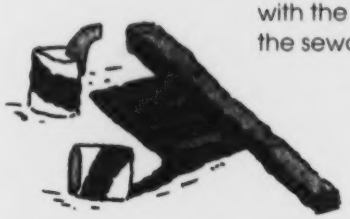
When you pour something down a sink or flush it down the toilet, the water and the product go to the sewer or to a septic system. The sewers are a system of underground pipes that collect waste from each house, hotel, store, office building and factory. They bring it all together into huge pipes at a sewage treatment plant.

If your house is not hooked up to a sewer system, it has a septic tank. A septic tank is a large underground concrete container hooked to fields where water drains. It is like a small sewage treatment plant. In both cases, the waste is broken down (decomposed) by small organisms. If pollutants enter the system, the organisms are killed and the hazardous substances remain. They can then get into the soil in the drainfield, into groundwater and into connecting waterways.



INTO A STORM DRAIN

A storm drain is the metal grate at the sides or curbs of streets. Underneath the grate is a catch basin which catches the rain that runs into the drain. Anything that is poured into a gutter, into a backyard or on a driveway can go with the rain or sprinkler water into the drain. Storm drains are hooked up to pipes that go to creeks, rivers and lakes. In some areas, the pipes join up with the sanitary sewage pipes and go to the sewage treatment plant.



QUIZ TIME

Answer the following questions concerning hazardous household products:

1. Who can become injured if you throw your hazardous household products in the trash before they are empty?

   Garbage collectors and workers at landfills

2. Where do hazardous chemicals go if they are buried in the ground?

   Into the soil and groundwater

3. What is sometimes caused by burning products that contain hazardous substances?

   Air pollution and explosions

4. Who might be in danger if household products are stored for a long period of time in the garage or on storage shelves?

   Small children and firefighters

5. Where does anything go if you pour it down the sink, flush it down the toilet or put it in a storm drain?

   To the sewers or to a septic system and to creeks, rivers, lakes

ACTIVITY 1

ACTIVITY 1

QUIZ TIME

Have your members complete the quiz during a meeting or correct the quiz as a group if your members complete them at home.

LEADER TIP

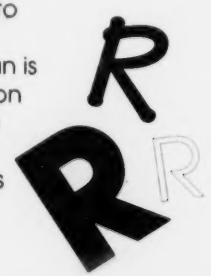
THE THREE R'S

When we throw away trash, we are typically throwing away natural resources and energy. In addition, the items in the trash can harm the environment and people. The good news is that the waste issue is a problem that we can all solve by implementing the **Three R's**! The three R's are: reuse, reduce, and recycle.

REUSE promotes the conservation of natural resources and the reduction of waste. Things do not have to be reprocessed and recycled in order to be used again. We can reuse empty food containers for other purposes instead of throwing them away. We can reuse unused or partially used products in their original containers (paints, fertilizers, cleaners, hobby supplies, etc.) by giving them to local community groups, schools, businesses or to others who may use them.

REDUCING the amount of waste one generates saves landfill space and creates less associated disposal problems. We can all reduce waste. Avoid buying a different product for every single kind of dirt or cleaning problem. One or a few general household cleaners can effectively clean a multitude of surfaces. Buy only the amount you need. Any savings gained by buying a larger size will be offset by the headache of later properly disposing of it.

RECYCLING is a sensible way to make our resources go further. We can recycle solid waste items (paper, glass, aluminum, etc.) and hazardous items (batteries, paints, automotive oils, etc.) Throwing away an aluminum beverage container wastes as much energy as pouring out a can half-filled with gasoline. Failing to recycle a daily edition of the Washington Post or London Times wastes just as much. Making aluminum from recycled aluminum uses 90 to 95 percent less energy than making aluminum from bauxite ore. If you drink two aluminum cans of soft drinks per day and fail to recycle the cans, you waste more energy than is used daily by one person in a poorer land! There are close to one billion people who live like this on the planet.



THE THREE R'S

There is more we can do with hazardous household products than throw them away. Many things we toss into the trash can be reused, reduced or recycled. These are called the THREE R'S.

REUSE

Give the leftover pesticides or paint to a school or church; they will use it up safely and then throw the can away.

REDUCE

Use fewer hazardous household products. A general household cleaner can work in many places. You don't need a different cleaner for each kind of dirt or cleaning problem.

RECYCLE

Help your family recycle used motor oil, brake and transmission fluids, water-based latex paints and car batteries, in addition to your other recyclables (newspapers, aluminum, glass, plastic and cardboard).

LEADER TIP

THE THREE R'S

Read this information together as a group. Ask each member to provide an example of one "R" that they can implement.

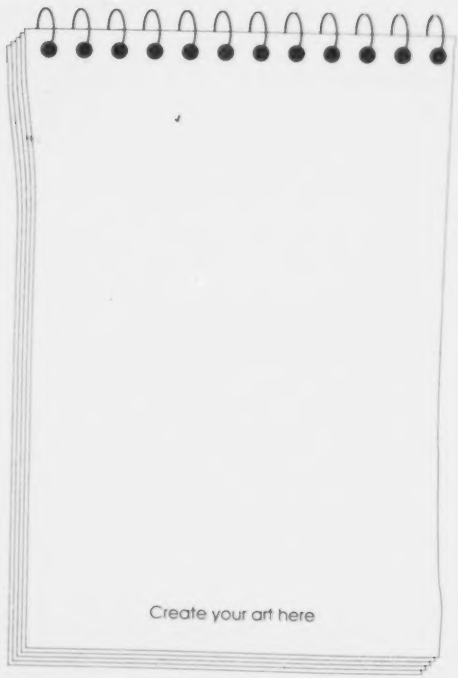
ACTIVITY 2

DO SOME ART

Encourage some creative design from your members about the Three R's. Members can design in their workbooks or on materials that you provide.

DO SOME ART

M ake a poster, bumper sticker or cartoon about the THREE R'S. At your next group meeting, share it with other members. Share it with your family.



ACTIVITY 2

ACTIVITY 3

RECYCLE YOUR TRASH

Many communities have recycling centers for common solid waste items (newspaper, aluminum cans, glass, plastic bottles and cardboard). Some of these recycling centers will also accept household hazardous waste that you need to get rid of. Your activity: call your local recycling center and ask them what items will they accept? List items here:

_____
_____
_____
_____
_____

ACTIVITY 3

RECYCLE YOUR TRASH

As the Leader, you should complete Activity 3 before the meeting. Obtain as much information as possible regarding what items are accepted by which entity. Solid waste is often accepted at your local college, grocery store or by civic groups. Household hazardous wastes are not collected as frequently or in as many locations.

LEADER TIP

COLLECTION DAYS

Ask your members if any of them have participated in a household hazardous waste collection day. Discuss what they do with their waste currently.

COLLECTION DAYS

Some communities have set up collection days or places just for those hazardous household items that you no longer want or need. These are called HOUSEHOLD HAZARDOUS WASTE COLLECTION EVENTS. These places are usually staffed by people who are trained in hazardous materials. These people usually work for the fire department, the health department, the public works department or another agency.

ACTIVITY 4

LET YOUR FINGERS DO SOME WALKING

Open up the white pages of your telephone book. Go to the Government section in the front. Look under COUNTY and find the listing for the HEALTH DEPARTMENT. During normal business hours call the office and ask them if the health department manages household hazardous waste collection events. If they say no, ask them who does do that in your community. Write their answer here.

_____

_____

_____

_____

_____

_____

ACTIVITY 4

LET YOUR FINGERS DO SOME WALKING

Refer to your white pages and get a feel for what your members are encountering. Record all telephone numbers that you think pertain to hazardous substances.

Demonstrate to your members how to find the local listings in the telephone book. Discuss the questions they will ask Health personnel.

Following the completion of Activity 4 (either at the meeting as a group, or at home individually) discuss the responses received. What have your members discovered?

LEADER TIP

Here are some helpful telephone numbers of State agencies that deal with waste:

• **CALIFORNIA DEPARTMENT OF HEALTH SERVICES, TOXIC SUBSTANCES CONTROL PROGRAM, GENERAL INFORMATION:**

(916) 324-1826

This telephone number is good for questions regarding hazardous waste.

• **CALIFORNIA DEPARTMENT OF HEALTH SERVICES, WASTE ALERT HOTLINE**

1-800-25TOXIC

This telephone number is good to report violations.

• **CALIFORNIA DEPARTMENT OF HEALTH SERVICES, HAZARDOUS PRODUCT LINE**

1-800-334-1697

Use this telephone number to receive information on hazardous products.

• **CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD RECYCLING HOTLINE**

1-800-553-2962

Use this telephone number to find the local telephone number for the agency conducting Household Hazardous Waste Collection days in your area.

PREVENT POLLUTION

Our land and our water becomes polluted in many ways. The oil and grease that are washed from cars often ends up in storm drains and then in streams and rivers. Pesticides are often washed off from farmers' fields. Waste water from industries is sometimes discharged directly into streams.

Knowing this, try to answer the following questions:

1. If there was an oil leak from a car in your driveway, where would the oil go?
   To the gutter and then to the storm drain. From the storm drain the oil could cause water pollution as it travels in streams and rivers.
2. If there is an oil spill in the ocean, are birds and other wildlife going to be injured or die?
   YES. Feathers are damaged, embryos are killed when oil seeps into eggs, fish suffocate because their gills become clogged, and marine and land animals die from ingesting food and water contaminated by oil.

ACTIVITY 5

ACTIVITY 5

PREVENT POLLUTION

This activity serves as a chance for members to make the connection between things we rely on (automobiles and oil) and environmental pollution.

Environmental degradation is a serious problem. Our air, water and land is polluted from many sources. Automobiles, factories, houses, barbeques, mines, and farming fields all contribute to pollution.

Automotive oil contains hydrocarbons, lead and other metals from enginewear. It is highly flammable and can be toxic. Crude oil on a tanker is processed and used to make many things.

ACTIVITY 6

SCRAPBOOK

To assist your members with Activity 6, prepare a sample page of a scrapbook. Include the one sentence statement describing the problem and the correct disposal method.

ACTIVITY 6

MAKE A HAZARDOUS SCRAPBOOK

Look for newspaper articles in your local paper and in magazines. Cut out the headlines, photos or comics that relate to hazardous materials. Paste them on the scrapbook pages.

Below each article write one sentence about the correct disposal method that should have been used.

HAZARDOUS SCRAPBOOK ITEMS

ACTIVITY 6

Don't forget to add the disposal information!

section 3 51

ACTIVITY 6

SCRAPBOOK

Spend a good portion of a meeting sharing scrapbooks, discussing the problems that members found and possible solutions.

Consider inviting personnel from an Agency that regulates waste to a meeting to discuss some of the local scrapbook items.

ACTIVITY 7

WHAT HAVE WE LEARNED?

Complete the "quiz" as a group or individually. There is more than one correct answer to question 3.

ACTIVITY 7

WHAT HAVE WE LEARNED?

Answer the following questions about this section.

1. TRUE OR FALSE? Dumping hazardous household products down the toilet is a correct disposal method.
   False

2. Name the THREE R's that can lessen the disposal problem.
   Reuse, Reduce, Recycle

3. Name three items that can be taken to a household hazardous waste collection event.
   Aerosols, batteries, medicines, cleaning products, paints, automotive products, fertilizers, pesticides

4. TRUE OR FALSE? You can do something about the hazardous waste problem.
   True

SECTION

4

SAFER ALTERNATIVES

PURPOSE

Develop knowledge of safer alternatives to hazardous products.

OBJECTIVE

The member will be able to:

1. Name substitutes of commonly used household items.
2. Compare the benefits of products and their substitutes.

MATERIALS

Magazines, scissors, paper, tape, glue, pens, markers.

Optional: Safer substitutes and common household products.

LEADER TIP

SAFER ALTERNATIVES

Read this introductory page together as a group.

SECTION

4

SAFER ALTERNATIVES TO HAZARDOUS HOUSEHOLD PRODUCTS

Compare And Contrast

Most people are unaware that there are safer alternatives that can be used in place of many potentially hazardous products. This section will show you some of the suggested alternatives, and how easily they can be used in your household.

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LEADER TIP

NON-HAZARDOUS ALTERNATIVES

The four following pages describe safer substitutes for some household products. Feel free to share any other recommendations you may have with your members.

There are many effective alternatives to hazardous household products. When used, these alternatives typically save you money, protect your health and protect the environment. Of course, some common items with hazardous chemicals in them are not easily replaced. For example, a car battery may contain sulfuric acid which can cause burns and worse things if exposed to for a long period of time. There is no known alternative currently. Many of the automotive products have no known substitute yet (transmission and brake fluids, anti-freeze, and motor oil). This may change over time but we can all reduce our use of the products that do have safer substitutes available!

NON-HAZARDOUS ALTERNATIVES

The following is a list of safer substitutes for some household toxics. Generally, the products can be bought in grocery stores.

Aerosol Sprays
- Aerosols should not be used at all!
- Use non-aerosol, pump-type sprays.

Ant Control
- Sprinkle cream of tartar in front of the ants path. Ants will not cross over. Cream of tartar is a substance used in baking. Look in the kitchen cupboard.
- Try red chili pepper, salt, dried mint or sage in the ant's path.
- Mix 1 tablespoon borax, 1 tablespoon sugar and 2 tablespoons of water to make a thick syrup. Soak cottonballs in the mixture and put the cottonballs on low lids or something flat. Put the lids in the middle of the ant colony.

Bug Spray
- Place screens on windows and doors.
- Brewers yeast tablets taken daily give the skin a scent that mosquitoes seem to avoid.

NON-HAZARDOUS ALTERNATIVES

Chemical Fertilizers
- Compost.
- Mulch.
- Dried coffee grounds, bone meal and wood ashes.

Copper Cleaner
- Pour vinegar and salt over copper and rub.

Deodorizers / Air Fresheners
- Simmer cinnamon and cloves.
- Set out a dish of hot vinegar.
- Burn scented candles.
- Baking soda is good for odors in the refrigerator, cat box, drains and ash trays.

Detergents (Laundry and Dishwashing)
- For dishes, use baking soda and liquid soap.
- For laundry, use borax, washing soda or liquid soap.

Drain Openers
- Pour boiling water down the drain. Do this every week for preventive maintenance.
- Use a plumber's helper (plunger) or a plumber's snake.

NON-HAZARDOUS ALTERNATIVES

Flea Repellant
- Feed pets brewer's yeast, vitamin B or garlic tablets (not a lot!)
- Use eucalyptus leaves and seeds around the pet's bed.

Furniture Polish
- Mix lemon juice and vegetable oil.
- Mix vegetable oil and white vinegar.

Glass and Window Cleaners
- Use cornstarch and water.
- Mix 1/2 cup vinegar and one quart warm water. Wipe with newspapers.
- Use lemon juice and dry with a soft cloth.

Oven Cleaners
- Mix 3 tablespoons of washing soda with one quart of warm water.
- Place liners in oven to catch any drips during baking.
- Sprinkle salt on spills when they are warm and then scrub.
- Rub spills gently with steel wool.

NON-HAZARDOUS ALTERNATIVES

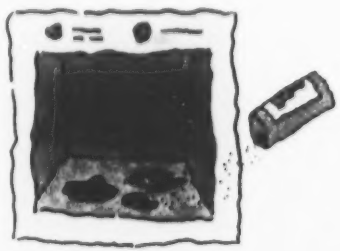
Oil or Solvent Based Paint
- Water based paints are less toxic than oil or solvent based. After using them, no solvent is necessary for "cleanup".

Rat and Mouse Poison
- Use mechanical snap mousetraps.

Rug and Upholstery Cleaners
- For spills, clean with club soda and clean cloth.

Scouring Powders (Abrasive Cleaners)
- Use baking soda or borax with a damp cloth.
- Scrub area with 1/2 lemon dipped in borax.

Snail / Slug Bait
- Place a shallow pan with beer in the infested area.
- Overturn claypots. The snails will take shelter in them during the sunny days and they can be collected and removed.



ACTIVITY 1

COMPARE AND CONTRAST

Have your members conduct activity 1 at home or set up the experiment at a meeting. You might consider comparing copper cleaner to vinegar and salt; or potpourri to air freshener.

ACTIVITY 1

COMPARE AND CONTRAST

In this activity, you get to compare safer substitutes to a product your household typically uses. Examples of these common products are: glass cleaner, snail bait, furniture polish and drain cleaner.

Pick two products that are normally used in your house. Find their safer substitute(s) on pages 56 - 59.

Ask an adult for permission to use the alternatives for 2 weeks. Complete the charts for the two products you selected. Fill in the blanks on pages 61 and 62.

You will be keeping track of:

1. Which product worked better (how efficient was it at doing its job)?
2. The cost of each product.
3. How easy is it to find the products in stores?
4. How are the products disposed?

COMPARE AND CONTRAST CHART

ACTIVITY 1

TYPICAL PRODUCT	SAFE SUBSTITUTE
Product: **Abrasive Cleaner**	Product: **Baking Soda**
Cost: **89¢**	Cost: **34¢**
Where was it bought? **Supermarket**	Where was it bought? **Supermarket**
How efficient was it? (Circle one) (Very) Moderate Not at all	How efficient was it? (Circle one) Very (Moderate) Not at all
Safety Tips: **Use gloves, use in ventilated area, don't mix with another cleaner!**	Safety Tips: **None**
How do you dispose of it? **Use it all or dispose at collection event.**	How do you dispose of it? **No limitations**

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ACTIVITY 1

COMPARE AND CONTRAST

If members complete the activity at the meeting, help them do a demonstration of the two products for the group. Make sure members fill in the blanks on the charts.

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ACTIVITY 1

COMPARE AND CONTRAST

If members complete the activity at home, spend a meeting sharing what each member learned while comparing products.

ACTIVITY 1

COMPARE AND CONTRAST CHART

TYPICAL PRODUCT	SAFE SUBSTITUTE
Product: **Copper Cleaner**	Product: **Salt & Vinegar**
Cost: **$3.27**	Cost: **69¢, 89¢**
Where was it bought? **Supermarket**	Where was it bought? **Supermarket**
How efficient was it? (Circle one) (Very) Moderate Not at all	How efficient was it? (Circle one) (Very) Moderate Not at all
Safety Tips: **Use gloves**	Safety Tips: **None**
How do you dispose of it? **Use it all or dispose at collection event.**	How do you dispose of it? **No limitations**

SHOW OFF YOUR SMARTS

Show the Compare and Contrast Chart to the person who normally uses that potentially hazardous household product. Ask them if they are willing to switch to the safer substitute.

ACTIVITY 2

ACTIVITY 2

SHOW OFF YOUR SMARTS

Ask members to discuss with their parents and siblings what life would be like without a particular product. Is the family willing to make the switch?

ACTIVITY 3

CUT AND PASTE

Provide magazines and newspapers and/or have members bring them. Assist your members in making collages. Let them be creative!

ACTIVITY 3

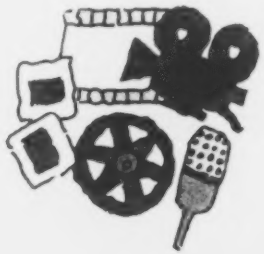
CUT AND PASTE

Make a collage of common products and their safer alternatives. Use pictures from newspapers and magazines and your own drawings.

ACTIVITY 4

MEDIA STAR

Pretend you are working for a television station, radio station or magazine. Write or draw an advertisement for a safer alternative.



CREATE YOUR ART HERE!

ACTIVITY 4

MEDIA STAR

Bring in advertisements of common products. Discuss with your members the fact that advertising influences us all. Ads often make us think we will be happy if we buy the product , or we will be better people because we use Brand X.

Using some advertisements, ask the members "Why was this ad written? What idea is being sold? Are there facts in this ad? Are there facts missing? What is appealing about this ad? Is this something you really need? Can you live without it? What else would you consider before you bought the product?"

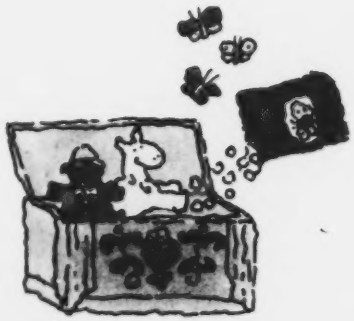
ACTIVITY 4

MEDIA STAR

Have members create their own advertisement for a safer substitute. Groups may want to develop a television or radio ad that they perform or a magazine or billboard ad that they draw.

Discuss what tactics each used in trying to sell their product. Did anybody leave information out or include exaggerations?

CHECK YOUR HAZARDOUS HOUSEHOLD PRODUCT IQ



Answer the following questions about safer substitutes:

1. List two household products and their safer substitutes.

   Ant spray _____ **Cream of tartar**

   Copper cleaner _____ **Vinegar and salt**

2. TRUE OR FALSE? Brewers yeast can take the place of bug spray.

   True

3. A clogged drain can be cleaned with

   Boiling water or a **Plumber's helper**

4. TRUE OR FALSE? Safer substitutes have less of a chance to harm you or the environment.

   True

ACTIVITY 5

section 4 69

ACTIVITY 5

CHECK YOUR IQ

Guide members through Activity 5 or simply verify the answers as a group if they completed them at home. Again, there is more than one correct answer in some cases.

ACTIVITY 6

WORD MAZE

Have members complete the word maze at home or do it at the meeting. Consider making it a race and then having a contest where each word in the maze has to be defined or an example given.

ACTIVITY 6

WORD HUNT

Find the words in the maze. They may be in any direction.

ALTERNATIVE
BIODEGRADABLE
CHOICE
COMPARISON
COST
DISPOSAL
PRODUCT
SAFER
VINEGAR
WASHING SODA

W	A	S	H	I	N	G	S	O	D	A	G	O	C	F	V
A	T	O	B	N	L	C	E	S	D	O	P	S	O	B	I
U	C	H	O	I	C	E	O	O	N	X	T	A	M	L	N
T	U	I	O	K	M	A	H	S	O	B	L	F	P	A	E
I	D	A	L	T	E	R	N	A	T	I	V	E	A	S	G
O	O	A	F	R	A	M	M	A	B	O	E	R	R	O	A
N	R	M	O	Y	Z	E	D	I	E	N	T	S	I	P	R
W	P	S	T	G	G	L	T	N	O	R	M	I	S	S	E
F	O	E	L	B	A	E	D	A	R	G	E	D	O	I	B
L	H	O	M	N	C	R	P	E	R	T	U	V	N	D	M

SECTION
5

WHAT DO YOU KNOW?

Your members have now learned what hazardous products are, how they can impact both health and the environment and what safer alternatives exist. To translate this awareness into action, consider furthering the unit with the following activities:

1. Produce a newsletter; this can range from handwritten booklets to professionally laid-out brochures. Have students share what they have learned, describe issues they are concerned about, encourage community action or elaborate on activities from the workbook.

2. Conduct a survey in the community regarding a "hazardous" issue; i.e. hazardous waste sites, recycling centers, household hazardous waste collection centers, how people feel about "toxics."

3. Start a letter writing campaign on an issue they have covered while conducting activities in the handbook (i.e. there is no place to take household hazardous products in your community).

4. Organize a community parade with a waste reduction theme.

5. Throw a "Three R" carnival with games and booths that promote the theme of reduce, reuse, and recycle.

6. Encourage older members to instruct younger members in this topic. The older members can take this workbook into other clubs, churches and/or after-school programs.

LEADER TIP

EVALUATE YOUR EXPERTISE

This last section is a summary of objectives in sections one through four.

SECTION

5

EVALUATE YOUR EXPERTISE

You have now toured your home, the garage, and other storage areas and become acquainted with hazardous items. You know that hazardous substances can harm you, your pets, and your environment. To prevent such injury you must use, store and dispose of the items safely. You have also seen some safer substitutes that you can use if you decide to make the switch.

Complete the last set of activities and be safe with hazardous household products in the future!

71

160

161

ACTIVITY 1

HOW IS IT HAZARDOUS

Place an "**I**" if the object is IGNITABLE, "**C**" if it is CORROSIVE, "**R**" if it is REACTIVE, and "**T**" if it is TOXIC. Some items may need more than one letter.

c, t	car battery
t	unused drugs and medication
r	chlorine and ammonia mixed together
i	hair spray
c, t	scouring powders
i, t	motor oil

ACTIVITY 1

HOW IS IT HAZARDOUS

Treat activity 1 as a quiz and discuss each answer.

ACTIVITY 2

FILL IN THE BLANKS

FILL IN THE BLANKS

Materials that can cause harm to you or the environment are

Hazardous _____

The three "R"s are

Reduce _____

Reuse _____

Recycle _____

ACTIVITY 2

ACTIVITY 3

FILL IN THE BLANKS

ACTIVITY 3

FILL IN THE BLANKS

How can hazardous waste be safely disposed?

At a household hazardous waste

collection event

Name three advantages of using safer substitutes.

Save money

Protect human health

Protect the environment

ACTIVITY 4

YOUR LAST QUIZ

YOUR LAST QUIZ

Match the correct word with the definition.

a. reactive
b. poison control centers
c. incineration
d. dispose
e. recycle

d To throw something away
c To burn something
e Processing used material into new products
b Facilities with experts to answer questions about hazardous substances
a Something that can catch fire, explode, or give off dangerous fumes

ACTIVITY 4

APPENDIX A
HOUSEHOLD PRODUCTS

PRODUCT TYPE	POSSIBLE INGREDIENTS	POTENTIAL HAZARDS
Asphalt/Roofing Tar	**Petroleum Solvents	Associated with skin and lung cancer; irritant to skin, eyes, nose, lungs; entry into lung may cause fatal pulmonary edema (excess fluid in lung tissues).
Batteries	Mercuric oxide (in mercury batteries)	Ingestion may be fatal.
Bleach	Sodium hypochlorite	Corrosive. Irritates or burns skin, eyes, respiratory tract; may cause pulmonary edema or vomiting and coma if ingested; contact with other chemicals may cause chlorine or chloramine fumes.
Disinfectants	Sodium hypochlorite	Corrosive. Irritates or burns skin, eyes, respiratory tract; may cause pulmonary edema or vomiting and coma if ingested.
	Phenol	Flammable; very toxic; respiratory, circulatory or cardiac damage.
	Ammonia	Vapor irritating to eyes, respiratory tract and skin; possible chronic irritation.
Drain Cleaner	Sodium or potassium hydroxide	Caustic; irritant; inhibits reflexes; burns to skin, eyes; poisonous if swallowed due to severe tissue damage.
	Hydrochloric acid	Corrosive, irritant; damage to kidney, liver and digestive system.
	Trichloroethane	Irritant to nose and eyes; central nervous system depression; liver and kidney damage if ingested.
Flea Powder	Carbaryl	Very toxic; interferes with human nervous system; may cause skin respiratory system, cardiovascular system damage.
	Dichlorophene	Skin irritation; may damage liver, kidney, spleen and central nervous system.
	**Chlordane and other chlorinated hydrocarbons	Very slow biodegradation; accumulates in food chain; may damage eyes, lungs, liver, kidneys and skin.
Floor Cleaner/Wax	Diethylene Glycol	Toxic; causes central nervous system depression and kidney, liver lesions.

HOUSEHOLD PRODUCTS

PRODUCT TYPE	POSSIBLE INGREDIENTS	POTENTIAL HAZARDS
Floor Cleaner/Wax	**Petroleum Solvents	Highly flammable; associated with skin, eyes, nose, throat, lungs.
	Ammonia	Vapor irritation to eyes, respiratory tract and skin; possible chronic irritation.
Furniture Polish	**Petroleum distillates or Mineral spirits	Highly flammable; moderately toxic; associated with lung cancer; irritant to skin, eyes, nose, throat, lungs; entry into lungs may cause pulmonary edema.
Inks	**Glycols	Toxic; poison by skin absorption, ingestion and sometimes inhalation; eye irritant; stupors; kidney damage; anemia.
	**Alcohols	Volatile and flammable; methanol is very toxic if swallowed; eye, nose and throat irritation.
	**Glycol ethers	Highly flammable.
Metal Polish	**Petroleum solvents	Highly flammable; associated with lung and skin cancer; irritant to skin, eyes, nose, throat, lungs.
	Oxalic acid	Potential damage to respiratory system, lungs, skin, kidneys, skin and eye irritant.
Mothballs	**Chlorinated aromatic hydrocarbons (dichlorobenzene)	Flammable; accumulate in the food chain; vapor irritating to skin, eyes, throat; dichlorobenzene is a suspected carcinogen.
	Napthalene	Possible damage to eyes, blood, liver, kidneys, skin, central nervous system; suspected carcinogen.
Nail Polish	**Aromatic hydrocarbon solvents	Flammable; very toxic; skin contact may cause irritation to chemical pneumonitis (lung inflammation); may cause kidney, liver, blood, central nervous system damage.
	Acetone	Moderately toxic; flammable; may cause respiratory ailments.
	Ethyl and butyl acetate	Moderately toxic; may cause central nervous system depression, damage to eyes, skin, respiratory system.
Oven Cleaner	Sodium or potassium hydroxide (lye)	Caustic; irritant, inhibits reflexes, burns to skin, eyes; poisonous if swallowed due to severe tissue damage.

HOUSEHOLD PRODUCTS

PRODUCT TYPE	POSSIBLE INGREDIENTS	POTENTIAL HAZARDS
Paint Thinner	**Chlorinated allphatic hydrocarbons	Slow decomposition; liver and kidney damage.
	**Esters	Toxicity varies with specific chemical; causes eye, nose and throat irritation.
	**Alcohols	Volatile and flammable; eye, nose and throat irritation.
	**Chlorinated aromatic hydrocarbons	Flammable; toxic; accumulate in food chain.
	**Ketones	Flammable; toxicity varies with specific chemical; may cause respiratory ailments.
Paints	**Aromatic hydrocarbon thinners	Flammable; skin irritant; benzene is a carcinogen; possible liver and kidney damage.
	Mineral spirits	Highly flammable; skin, eye, nose, throat, lung irritant; very high air concentrations may cause unconsciousness, death.
Septic Tank Cleaners	Trichloroethylene	Slow decomposition; known animal carcinogen; kidney, liver and spleen damage.
	Methylene chloride	Slow decomposition; liver and kidney damage.
Silver Cleaner and Polish	Denatured ethanol or isopropanol	Moderately toxic; central nervous system depressant.
	Phosphoric acid	Corrosive; irritant; possible damage to kidney, liver and digestive system.
Spot Removers	Perchlorethylene or trichloroethane	Slow decomposition; liver and kidney damage; perchlorethylene is a suspected carcinogen.
	Ammonium hydroxide	Corrosive; vapor extremely irritable to skin, eyes and respiratory passages; ingestion causes tissue burns.
	Sodium hypochlorite	Corrosive; irritates skin, eyes, respiratory tract; may cause pulmonary edema and skin burns.
Toilet Bowl Cleaners	Sodium acid sulfate or oxalate or hypochloric acid	Corrosive; burns from skin contact or inhalation. Ingestion may be fatal.
	Chlorinated phenois	Flammable; very toxic; respiratory, circulatory or cardiac damage.

HOUSEHOLD PRODUCTS

PRODUCT TYPE	POSSIBLE INGREDIENTS	POTENTIAL HAZARDS
Water Proofers	**Chlorinated Aliphatic solvents	Slow decomposition; liver and kidney damage.
	**Aliphatic and aromatic hydrocarbon solvents	Flammable; irritant; central nervous system depression; possible liver, kidney, spleen damage.
Window Cleaners	Diethylene glycol	Toxic; causes central nervous system depression and degenerative lesions in liver and kidneys.
	Ammonia	Vapor irritating to eyes, respiratory tract and skin; possible chronic irritation.
Wood Preservatives	**Chlorinated aromatic hydrocarbons	Flammable; toxic; accumulate in food chain.
	Mineral Spirits	Pentachlorophenol may be very toxic by ingestion or skin absorption.
	Pentachlorophenol	Irritates skin, eyes, throat; absorbed through skin; damages liver, kidneys, and nervous system.
Wood Putty	Ketones	Flammable; may cause respiratory ailments.
	Toluene	Flammable; very toxic; may cause skin, kidney, liver, central nervous system damage; suspected carcinogen.
Wood Stains/ Varnish	Mineral sprits, gasoline	Highly flammable; associated with skin and lung cancer; irritant to skin, eyes, nose, throat, lungs; entry into lungs may cause fatal pulmonary edema.
	Methyl and ethyl alcohol	Flammable; damage to eyes, skin, central nervous system.
	Benzene	Flammable; carcinogen; accumulates in fat, bone marrow, liver tissues.
	Lead	Damage to digestive, genitourinary, neuromuscular and central nervous system; anemia and brain damage.
Wood Strippers	Chlorinated aliphatic hydrocarbons (methylene chloride)	Slow decomposition; liver and kidney damage.
	Toluene	Flammable; skin irritation; narcotic properties; may damage liver, kidneys, central nervous system.
	Benzene	Flammable; carcinogen; accumulates in fat, bone marrow, liver tissue.

AUTOMOTIVE PRODUCTS

PRODUCT TYPE	POSSIBLE INGREDIENTS	POTENTIAL HAZARDS
Antifreeze	Ethylene glycol	Very toxic, 3 ounces can be fatal to adult; damage to cardiovascular system; blood, skin and kidneys.
	Methyl alcohol	Damage to eyes, central nervous system.
Auto Batteries	Sulfuric alcohol	Skin burns; single overexposure may lead to laryngeal or pulmonary edema (excess fluid in larynx or lung tissue).
Car Wax/Polish	Petroleum distillates	Associated with skin and lung cancer; irritant to skin, eyes, nose, lungs; entry into lungs may cause fatal pulmonary edema.
Degreasers	Chlorinated aliphatic hydrocarbons	Slow decomposition; trichloroethylene and perchlorethylene are suspected carcinogens; liver and kidney damage.
Engine, Radiator Flush/Cleaner	Chlorinated aliphatic hydrocarbons	Slow decomposition; liver and kidney damage.
	Acids	Corrosive, irritant, damage to kidney, liver and digestive system; pulmonary edema.
Motor Oil/ Gasoline	Petroleum hydrocarbons (benzene)	Highly flammable; associated with skin and lung cancer; irritant to skin, eyes, nose, throat, lungs; pulmonary edema; benzene is a carcinogen.
	Lead	Damage to digestive; genitourinary, neuromuscular and central nervous system; anemia and brain damage.
Rust Preventers/ Removers	Chlorinated aliphatic hydrocarbons	Slow decomposition; trichloroethylene and perchlorethylene are suspected carcinogens; liver and kidney damage.
	Potassium dichromate	Very toxic; highly corrosive to skin and nervous membranes; if ingested may cause coma, liver damage.

PESTICIDES

PRODUCT TYPE	POSSIBLE INGREDIENTS	POTENTIAL HAZARDS
Herbicides 2,4-D; 2,4, 5-T; 2,4-5-TP (Silvex)*MCPA, MCPB	Chlorinated Phenoxys	May be contaminated with dioxin, which is deadly and mutagenic; irritation to skin, eyes, throat.
Herbicides (Paraquat*, Diquat)	Dipyridyl	Toxic, causes skin, eyes and throat irritations; causes lung, kidney and liver damage, death.
Herbicides (Dinitrophenol, Dinitroorthocresal, Binapacryl)	Nitrophenols	Highly toxic; readily absorbed via skin, stains skin yellow; interferes with oxygen transfer in cells; damages liver, kidney, nervous system.
Pesticides (Aldicarb*, Oxamyl, Carbofuran, Methyomyl, Sectran, Propoxur, Carbaryl Sevin)	Carbamates	Interferes with human nervous system.
Pesticides (Endrin*, Aldrin, Dieldrin, Toxaphene*, Lindane, Benzene, Hexachloride*, DDT*, Heptachlor*, Mirex*, Methoxychlor)	**Chlorinated hydrocarbons	Very slow biodegradation; accumulation in food chain and in fatty tissue; attack nervous system; suspected carcinogens and mutagens.
Pesticides (Phorate, Mevinphos*, Demeton*, Disulfotan, Parathlon, Diazinon, Trichlorfon, Ronnel, Axinphosmethyl)	Organophosphorus	Poison by interfering with the nervous system; can be toxic; biodegradable, but not much is known about the breakdown products.
Pesticides (Monvran, Divron, Linvron, Bromacil, Terbacil, Altrazine, Ametryn)	Urea, Uracil, Triazine-based	Low toxicity, but will irritate skin, eyes, throat.
Rodenticides (Warfarin, Coumafuryl, Diphacinone, Pincione, Valone)	Coumarin	Anticoagulents may cause internal bleeding.

* These pesticides are banned or restricted and should not be used by households.

** Specific Compounds of this chemical type are found on "Partial List of Compounds of Chemical Classes."

REFERENCES

1. **NIOSH/OSHA Pocket Guide to Chemical Hazards**, Frank Mackison, Scott Scricoff, Lawrence Patridge, Editors, September 1978.

2. **Clinical Toxicology of Commercial Products**, Marion Gleason, et al., 1969.

3. **Toxicants in Consumer Products**, Susan Ridgley, Seattle, WA. Household Hazardous Waste Disposal Project, 1982.

4. **A Guide to the Safe Use and Disposal of Hazardous Products**, Metropolitan Area Planning Council, 1982.

Notes:

1. The potential health hazards listed in this table are symptoms of acute poisoning and may be experienced as a result of high exposure or direct ingestion.

2. This table has been reviewed for accuracy by the Department of Environmental Quality Engineering, Division of Hazardous Waste and the University of Massachusetts, Department of Health and Safety.

This table was taken primarily from Dyckman, C., Luboff, C. and Smith-Greathouse, L., "Household Hazardous Waste Disposal Project" Report 1D, Sleuth, Metro Toxicant Program, Seattle, WA, August 1982.

PARTIAL LIST OF COMPOUNDS OF CHEMICAL CLASSES

Alcohols - methanol (wood alcohol), ethanol (grain and rubbing), isopropyl (rubbing alcohol), butanol, amyl alcohol

Aldehydes - formaldehyde, other aldehydes

Aliphatic hydrocarbons - butane, pentane, hexane, heptane

Alkalies - ammonia, lime (calcium oxide), potassium hydroxide, sodium hydroxide, sodium silicate

Aromatic hydrocarbons - benzene, toluene (toluol), xylene (xylol); aromatic solvent naphtha; styrene, phenol (carbolic acid)

Chlorinated aliphatic hydrocarbons - (halogenated hydrocarbons, chlorinated paraffins) carbon tetrachloride, chloroform trichloroethylene (TCE), trifluorethane, perchloroethylene, trichloroethane (methyl chloroform), methylene chloride (dichloromethane), dichloropropane

Chlorinated aromatic hydrocarbons - chlorobenzene, dichlorobenzene, polychlorinated biphenyls (PCBs), chlorinated naphthalenes, chlorinated pesticides (DDT, kepone, etc.)

Chlorofluorocarbons - fluorocarbons, fluorinated hydrocarbons, halogenated hydrocarbons

Esters - methyl acetate, ethyl acetate, butyl acetate

Ethers - ethyl ether, isopropyl ether, glycol ether

Glycols - methyl cellosolve, ethylene glycol, diethylene glycol, carbitol

Ketones - Acetone, methylethyl ketone, hexane, MIBK, MBK

Petroleum distillates - petroleum ether; gasoline (petrol), white spirits, mineral spirits (Stoddard solvent), kerosene, fuel oil, lubricating oils, petroleum naphtha, lamp oil

Adapted from **Household Hazardous Products Handbook**, Federation of Ontario Naturalists.

THE HAZARD HOUSE WORKBOOK

A WORKBOOK ABOUT HOUSEHOLD CHEMICALS:

MEMBERS MANUAL

BEST COPY AVAILABLE

THE HAZARD HOUSE WORKBOOK

A WORKBOOK ABOUT
HOUSEHOLD CHEMICALS

MEMBERS MANUAL

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Check Your Hazardous Household Product IQ!

Children and adults are becoming more aware of the environmental problems of our planet. This book is about one environmental issue that you deal with every day: your house and the chemicals used in your house. Did you know that many common items around your house are dangerous? Oven cleaners, toilet bowl cleaners, garden fertilizers, motor oil and some hobby supplies can all be called hazardous.

This book will share information about those hazardous items. It will provide you with the facts and then let you decide what to do about them. Please turn the page and learn more about your house and what's inside!

SECTION

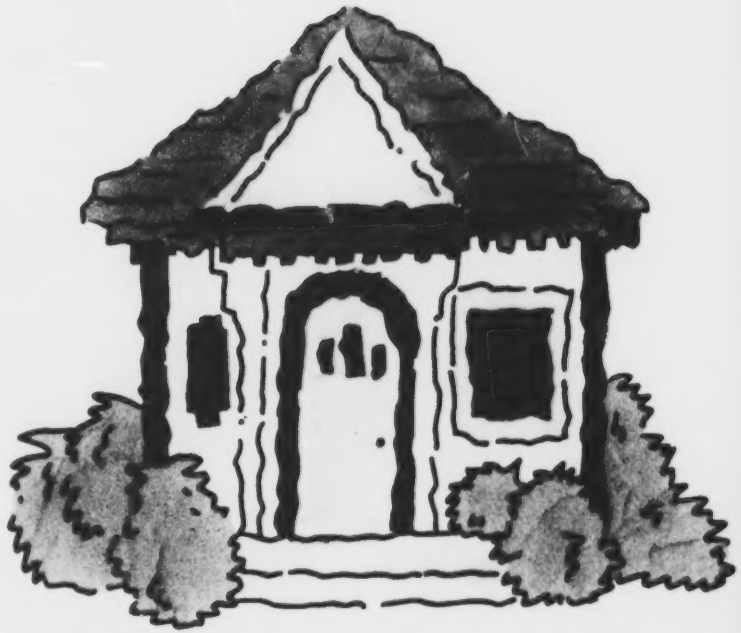
1

HAZARDOUS HOUSEHOLD PRODUCTS

What Are They?

Where Can They Be Found?

Many of the products found in and around your home, such as cleaners, furniture polish, garden items, paint, medicines and auto products, can be hazardous to you if used in the wrong way. This first section will help you understand what hazardous household products are and where they can be found.



WHAT DOES HAZARDOUS MEAN?

The word **HAZARDOUS** means that the chance of being injured or harmed is present. Hazardous things can make people, animals, or the environment sick.

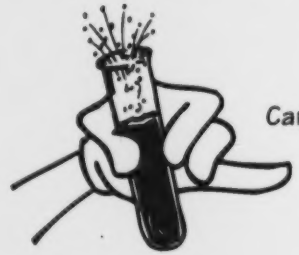
There are four ways to tell if something is hazardous. If something is ignitable, corrosive, reactive or toxic, it can be hazardous.

Ignitable

Can catch on fire easily.

Reactive

Can catch on fire, explode or give off dangerous fumes when exposed to water or air.



Corrosive

Can burn the eyes and skin or eat away containers.

Toxic

Can make you sick immediately or over a period of time.

WHAT IS A HAZARDOUS HOUSEHOLD PRODUCT?

A hazardous household product is just what the name says - it is a product in your house that can be hazardous. Some common items are toilet bowl cleaners, weed killers, bleach, oil, anti-freeze and oven cleaners. If these items are used, stored or disposed of improperly, you, your pets or the environment can be injured.

LOOK WHAT'S HAZARDOUS

The following is a list of some hazardous household products that you may find around your house. Can you think of other hazardous household products not mentioned? If so, add them to the list.

Pet Flea Collars
Toilet Bowl Cleaners
Slug Bait
Laundry Detergent
Weed Killer
Oil
Antifreeze
Brake Fluid
Paint
Room Deodorizers
Oven Cleaners
Glass Cleaners
Furniture Polish
Paint Strippers
Medicines
Pool Acids
Bubble Bath
Floor Polish
Charcoal Lighter

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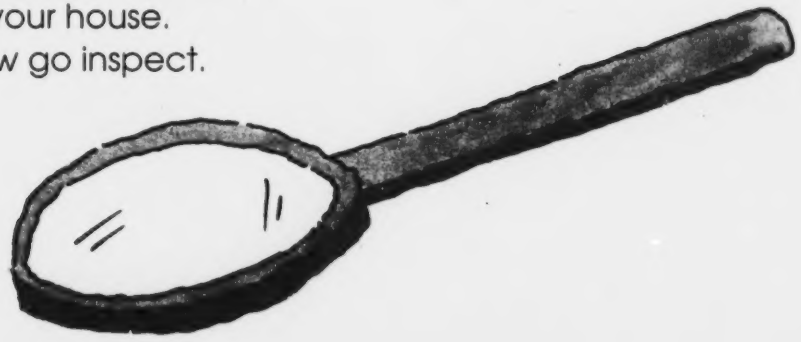
201

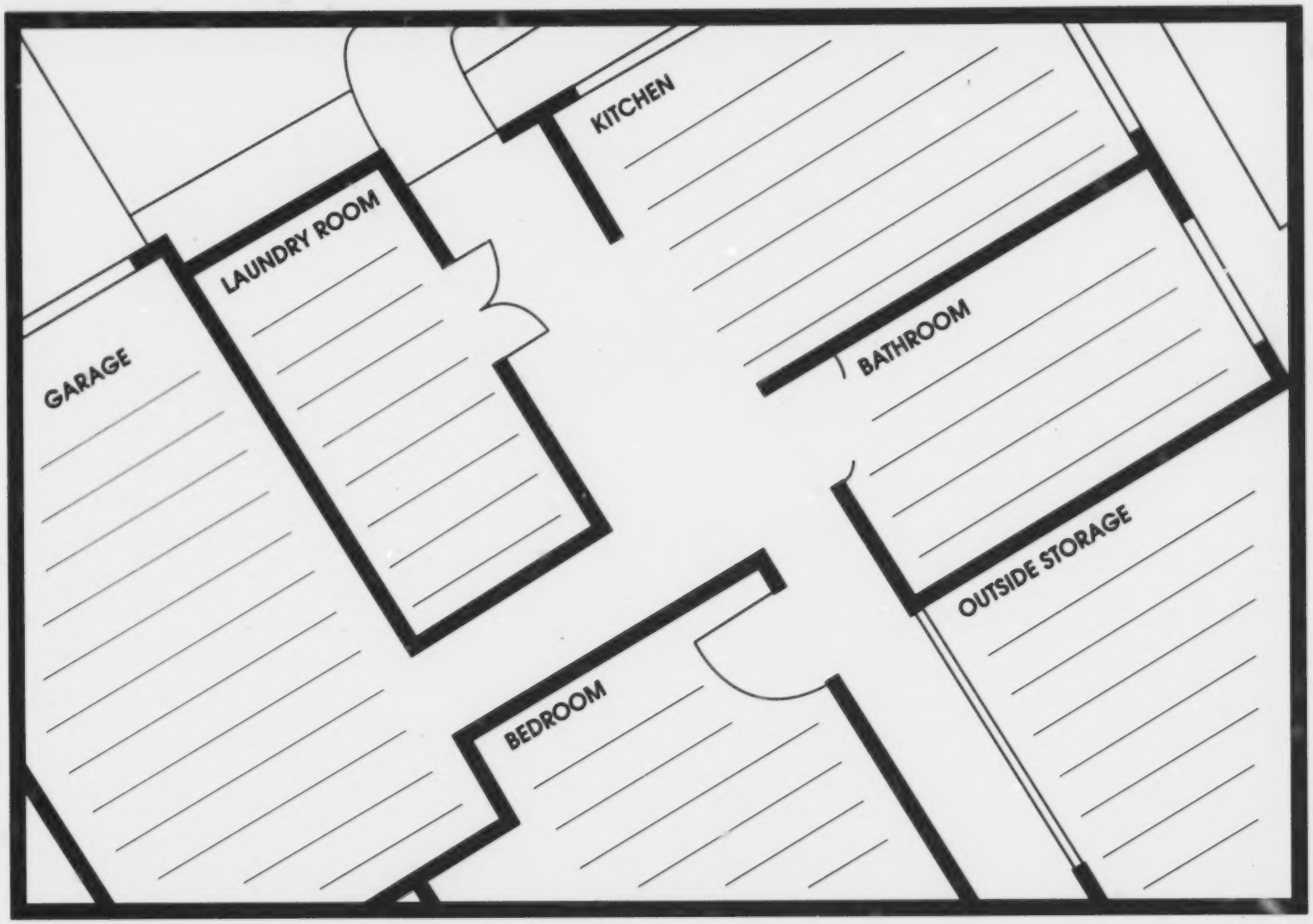
BE A HAZARD DETECTIVE

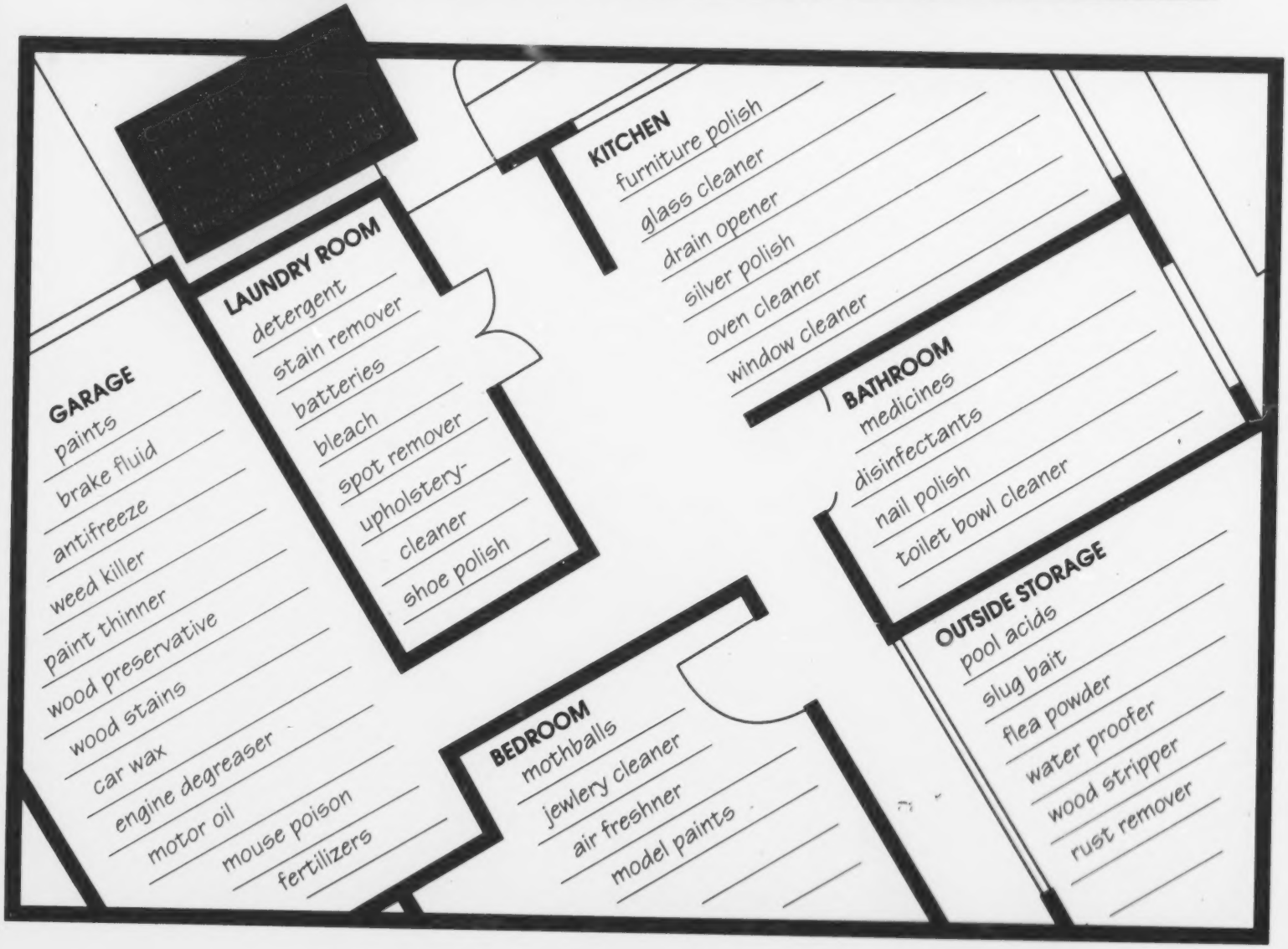
ACTIVITY 1

Inspect your household for hazardous household products. Fill in the map on the following page where they are located. Be sure to look in any storage areas, sheds or garages that may be part of your house. Now go inspect.



ACTIVITY 1


KITCHEN
LAUNDRY ROOM
GARAGE
BATHROOM
OUTSIDE STORAGE
BEDROOM


KITCHEN
furniture polish
glass cleaner
drain opener
silver polish
oven cleaner
window cleaner
LAUNDRY ROOM
detergent
stain remover
batteries
bleach
spot remover
upholstery-
cleaner
shoe polish
GARAGE
paints
brake fluid
antifreeze
weed killer
paint thinner
wood preservative
wood stains
car wax
engine degreaser
motor oil
mouse poison
fertilizers
BATHROOM
medicines
disinfectants
nail polish
toilet bowl cleaner
BEDROOM
mothballs
jewlery cleaner
air freshner
model paints
OUTSIDE STORAGE
pool acids
slug bait
flea powder
water proofer
wood stripper
rust remover

ACTIVITY 2

READ THE LABEL

Label reading is a good way to see the benefits and the possible dangers of a product. A variety of signal words are used to alert the user to potential dangers. The following list shows the many words you can find on labels.

CAUTION - Be careful. The product should be used with care.

WARNING - It implies a stronger risk than caution. Use with added care.

DANGER - Exposure or unsafe use may cause injury, illness or death.

POISON - A substance that, through its chemical action, usually kills, injures or impairs a living thing quickly.

TOXIC - Similar to poison, but injury can occur quickly or over a long period of time.

HARMFUL - Can cause injury or damage.

FLAMMABLE - Easily set on fire, will burn quickly.

SKULL & CROSSBONES - Danger. May cause injury, illness or death.

ACTIVITY 3

WORD SEARCH

Labels on packages tell you if something is safe or dangerous to handle. Here is a list of words you might find on a label. Try to find them in the word search puzzle!

C O R R O S I V E M T P L N G J
A S O B N L X E S D O P K I B N
U U B X P O I S O N X T G N C E
T O I O K M G H P O I L E B A L
I D P L M C D E T T C W R T V G
O R A F L A M M A B L E X P I O
N A I N G R E D I E N T S B O O
W Z L T G G H A R M F U L Q W E
P A T N B E W A R N I N G O I K
T H O M N C R P E R T U V I L M

CAUTION
CORROSIVE
DANGER
FLAMMABLE
HARMFUL
HAZARDOUS
INGREDIENTS
LABEL
POISON
TOXIC
WARNING

ACTIVITY 4

HAZARD STICKERS

Design a sticker that you can put on all the hazardous household products in your house. It can look like any of the examples you see here or whatever you think will be effective in warning people that these products are hazardous.

DESIGN YOUR STICKER HERE!

ACTIVITY 4

ACTIVITY 5

DO THE COUNT

Count the number of household products on your list from Activity 1, page 6. Draw as many stickers as you need. Color them and cut them out. Tape or glue them onto the hazardous household products that you located. Don't cover up the labels already on the containers!

GOOD LABEL? BAD LABEL?

A good informative label should include the following:

1. A signal word such as "danger", "warning" or "caution" depending on the level of danger. This should appear on the front label.
2. A description of the hazard, such as "vapor-harmful", "flammable", etc. This should also appear on the front label.
3. A statement that warns users how to avoid the hazard. Example: "Use in a well ventilated area".
4. A common or chemical name for the hazardous substance.
5. Instructions for safe use and handling.
6. First aid instructions.
7. The name and location of the manufacturer, distributor or repacker.
8. The statement, "Keep Out of Reach of Children", or its equivalent.

ACTIVITY 6

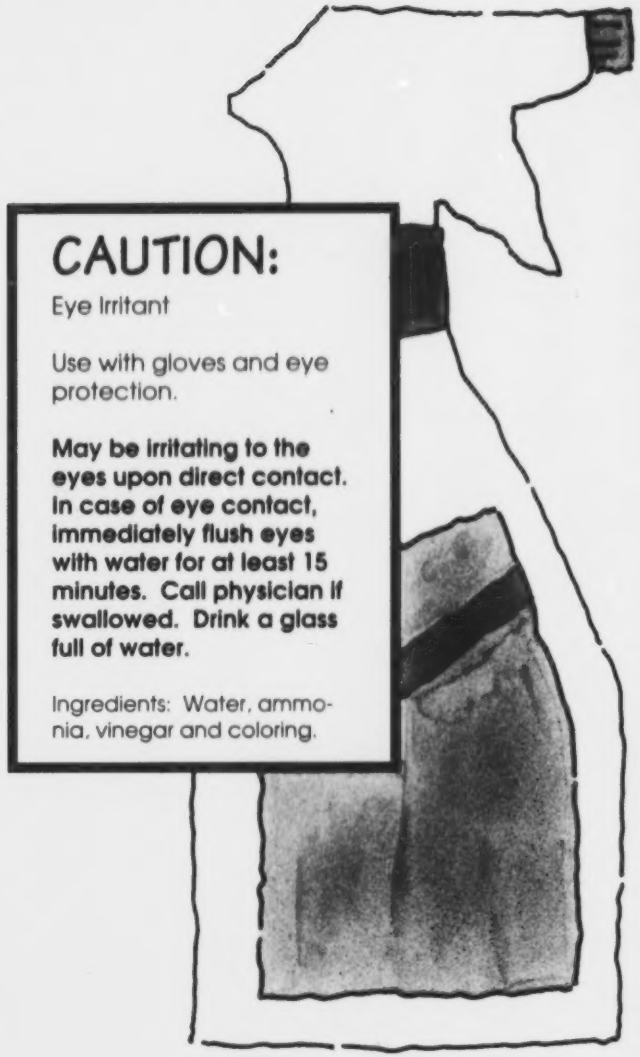
YOU BE THE JUDGE

Review the 2 examples of product labels. Does each label have all the warnings that it should? Go back to page 13 to see what an informative label should include. Fill in what's missing in the blanks.

This product label is missing two requirements. What are they?

1.

2.


CAUTION:
Eye Irritant
Use with gloves and eye protection.
May be irritating to the eyes upon direct contact. In case of eye contact, immediately flush eyes with water for at least 15 minutes. Call physician if swallowed. Drink a glass full of water.
Ingredients: Water, ammonia, vinegar and coloring.

ACTIVITY 6

This product label is missing two requirements. What are they?

1.

2.

DANGER:
KEEP OUT OF REACH OF CHILDREN. CAN CAUSE BURNS ON CONTACT. HARMFUL IF SWALLOWED.
FIRST AID: EYES: Rinse eyes immediately with water. SWALLOWED: Rinse mouth. Drink a glass of water or milk. Do not induce vomiting. SKIN: Remove affected clothing, flush skin with water.
Ingredients: Contains 1.7% sodium hydroxide and 6% sodium hypochlorite.
An ACME product, ACME PRODUCTS, Acme, Anywhere 99999.

ACTIVITY 7

WHAT HAVE WE LEARNED?

Answer the following questions about this section. Tally your answers and review the questions you missed. How did you do?

1. Give three examples of hazardous household products.
   a)
   b)
   c)

2. Name three examples of signal words used on labels of hazardous household products.
   a)
   b)
   c)

3. TRUE OR FALSE? Headaches, sleepiness and dizziness may be signs of overexposure to hazardous chemicals.

4. TRUE OR FALSE? Something is hazardous if it is toxic, flammable, corrosive or ignitable.

5. TRUE OR FALSE? Something is hazardous if it can harm you, your pets or the environment.

SECTION

2

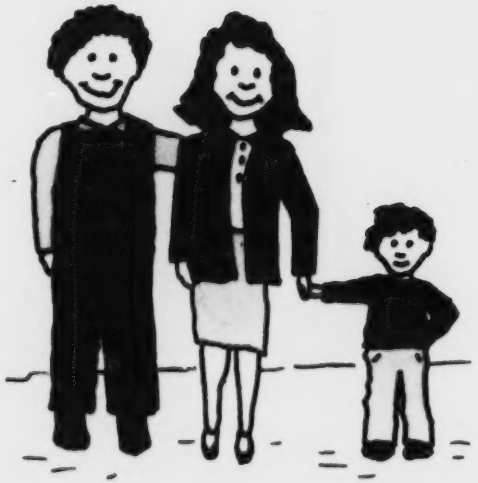
IS YOUR HEALTH SAFE?

Routes of Exposure

Do The Safety Rules

Who Can Help?

Many hazardous household products can harm people if used incorrectly. This section will show you how the human body can be affected by chemicals. You will also learn what safety rules you should follow when using hazardous household products.



ARE YOU EXPOSED?

Chemical exposure is what occurs when a living organism (you, a family member, or your pet) comes in contact with a chemical. A person cannot be affected unless the chemical is taken into the body. There are three ways that hazardous substances can get into the body and cause harm:

Inhalation
(breathing)

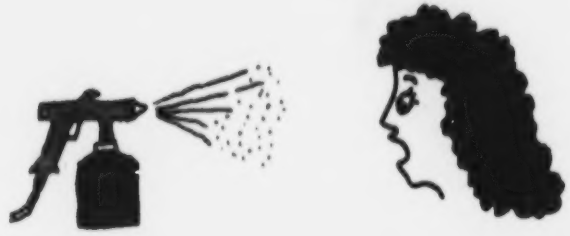
Ingestion
(eating or drinking)

Dermal Absorption
(skin contact)

WHICH WAY COULD THE BODY BE AFFECTED BY HAZARDOUS MATERIALS?

(Fill in the blanks)

ACTIVITY 1



_____

_____

_____

ACUTE OR CHRONIC

Effects of chemicals can be acute or chronic. An acute effect shows up shortly after a single large exposure to a chemical. An example would be a child drinking a large amount of drain opener. The substances in drain opener (called lye or sodium hydroxide) is very corrosive to body tissue and can cause burns. Once ingested, it will eat away at anything it touches - mouth, face, esophagus, etc. Chronic health effects are those which only show up after repeated exposures to substances. For example, pesticides often contain arsenic. If a person sprays pesticides regularly for many years, and comes into contact continually with the pesticide spray, the chronic health effects can include lung cancer and nervous system problems.

232

233

MATCH THE DEFINITION WITH THE APPROPRIATE WORD

a. acute
b. ingestion
c. chronic
d. inhalation
e. dermal contact

_____ Refers to eating or drinking something

_____ An effect caused by repeated exposures to a chemical

_____ Absorbing chemicals through the skin

_____ An effect after a short term, large exposure to a chemical

_____ Breathing a chemical or hazardous material into the lungs

ACTIVITY 2

DO THE SAFETY RULES

The following is a list of precautions (safety rules) that should be followed when using hazardous household products. Does your family follow these rules when using these items?

1. Read all labels carefully.
2. Do not mix products.
3. Use only in well ventilated areas.
4. Keep containers tightly closed.
5. Keep products away from children and pets.
6. Wear protective clothing (long sleeve shirts, gloves).
7. Clean up area after use.
8. Dispose of contents and/or containers in an appropriate manner.
9. Avoid aerosols.
10. Buy the least hazardous product (or choose a safer substitute).
11. Buy only the amount you need.
12. Know the number of the local poison control center.
13. Never put products in a different container.

WHAT SAFETY RULE IS BEING IGNORED?

(Fill in the blank below)

ACTIVITY 3

ACTIVITY 3

WHAT SAFETY RULE IS BEING IGNORED?

(Fill in the blank below)

_____

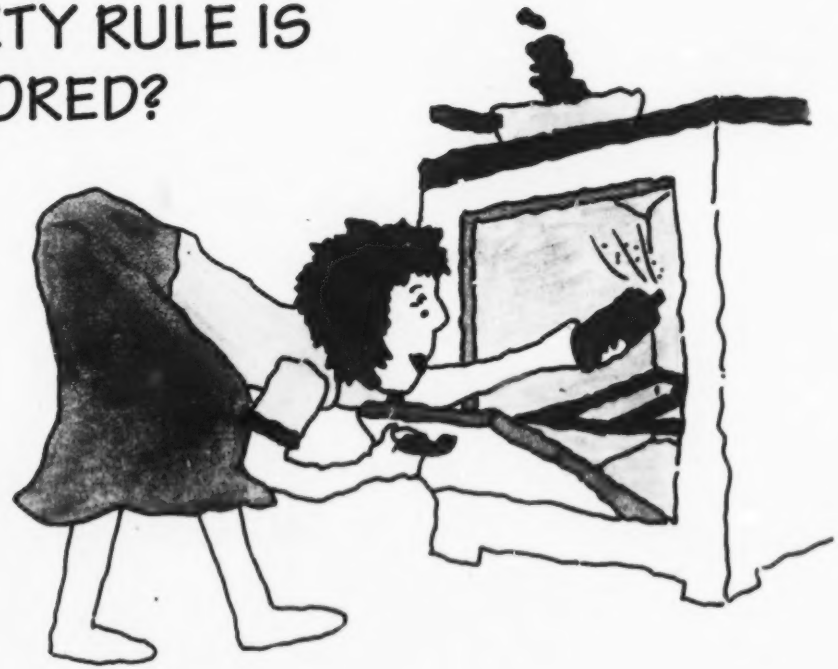
240

241

ACTIVITY 3

WHAT SAFETY RULE IS BEING IGNORED?

(Fill in the blank below)



WHEN IT COMES TO HOUSEHOLD HAZARDOUS PRODUCTS, BE PREPARED

GET READY! Someday you may be in an emergency when someone has been injured by hazardous substances. The most current information on how to handle this kind of problem is at your local Poison Control Center or your local Health Department. Look in the front of your telephone book for the telephone numbers.

Poison Control Centers are often inside your local hospitals. They are staffed with experts who can answer questions about hazardous substances and poisoning, treatment and prevention. They usually have different telephone numbers for emergencies and general questions.

EMERGENCY!

What is the emergency telephone number for your local Poison Control Center? Post this number near your telephone and in areas where household products are stored.

Fill in the phone # here_____

ACTIVITY 4

ACTIVITY 5

FIND OUT ABOUT YOUR LOCAL POISON CONTROL CENTER

USING THE NON-EMERGENCY NUMBER, call the local Poison Control Center. Do the following...

1. Identify yourself and what youth group you belong to.

2. Ask what steps should be followed if someone comes in contact with hazardous chemicals.

3. Ask what should be included in a home first-aid kit that could help in an emergency with hazardous products.

4. Thank the person for their time and information.

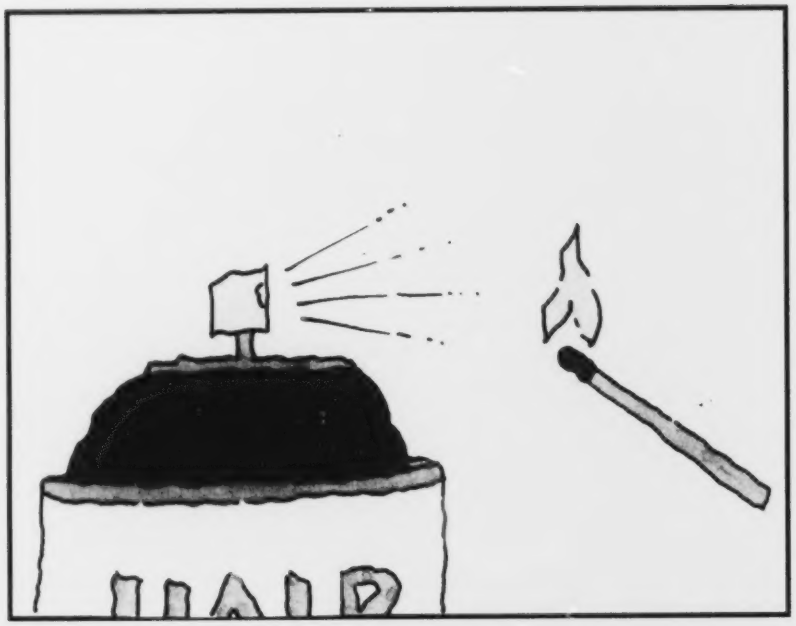
WHAT'S WRONG WITH THESE PICTURES?

The next three pages will show you situations that are potentially dangerous. Fill in the blanks below each picture. Describe what can go wrong. What is hazardous in each picture?

ACTIVITY 6

ACTIVITY 6

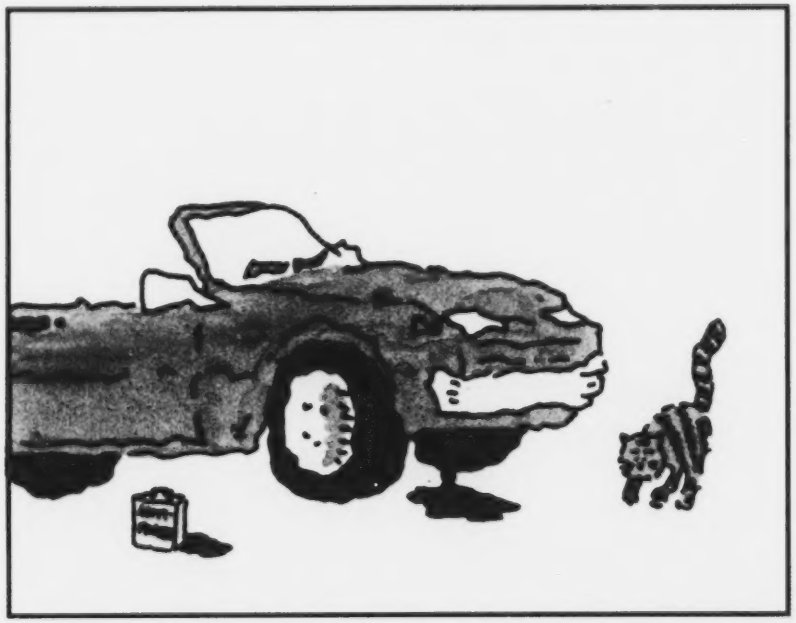
#1



252

253

#2



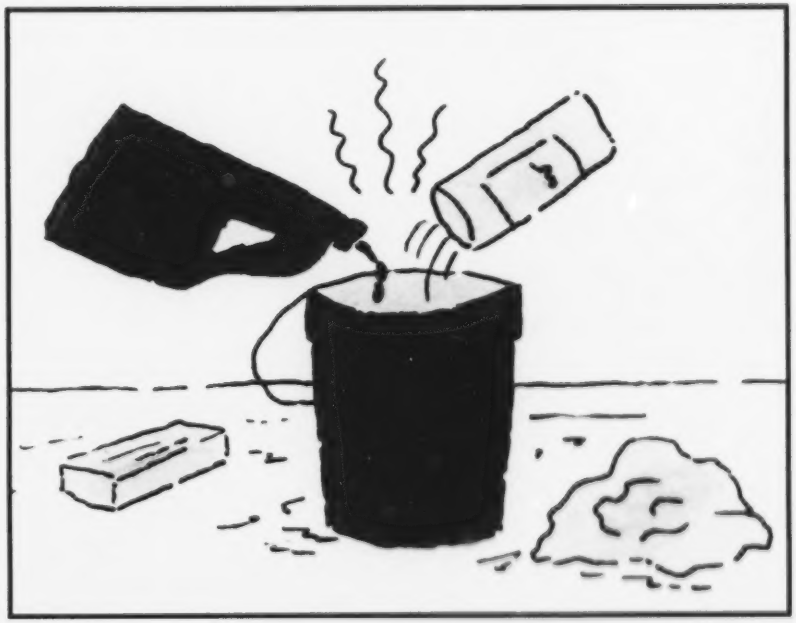
ACTIVITY 6

254

255

ACTIVITY 6

#3



256

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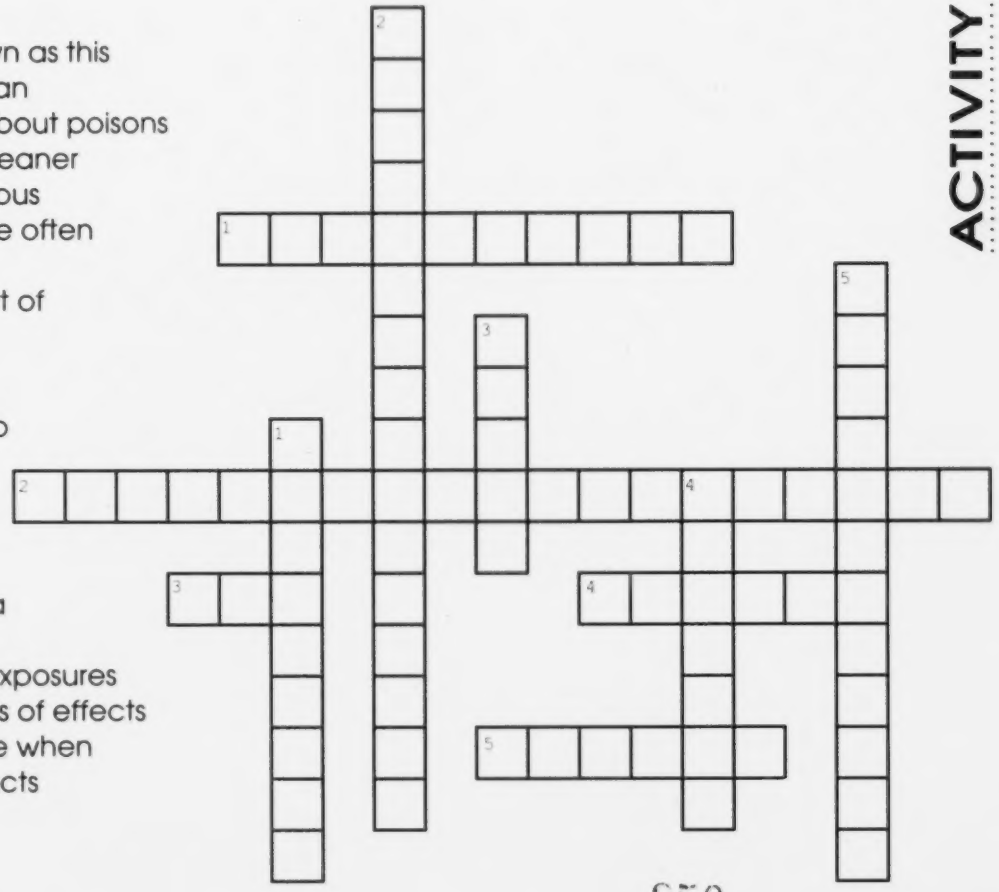
COMPLETE THE CROSSWORD!

ACTIVITY 7

ACROSS
1. To breathe is also known as this
2. An organization that can give you information about poisons
3. A substance in drain cleaner
4. A place where hazardous household products are often stored
5. A possible health effect of rug cleaners

DOWN
1. Eating or drinking is also called this
2. Skin contact is also known as this
3. A type of effect that shows up shortly after a single, large exposure
4. Numerous, repeated exposures can result in these kinds of effects
5. Number one safety rule when using household products



USE THESE WORDS FOR THE CROSSWORD PUZZLE:

acute
anemia
chronic
dermal absorption
garage
inhalation
ingestion
lye
poison control center
read the label

SECTION

3

TO THROW OR NOT TO THROW ?

Disposal Methods

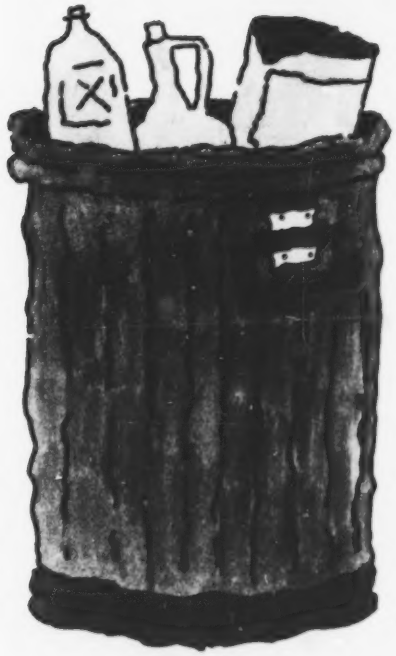
The Three R's

To dispose of something means to get rid of it or to throw it away. Some people dispose of hazardous products unsafely. This can hurt both humans and the environment. This section will help you understand correct and incorrect disposal methods, what can happen with these disposal methods, and, what groups exist to help you with these issues.

COMMON DISPOSAL METHODS AND THEIR DAMAGING EFFECTS

People often dispose of waste by throwing it in the trash, burning it, storing it, or dumping it down the sink, toilet or storm drain. All of these methods can sometimes harm the environment and people.

The following pages describe various methods of disposal and the possible dangers they pose to people and the environment.



IN THE TRASH

Garbage collectors have been injured by household products when they have collected the trash. Sometimes items such as pool chemicals splash in their eyes and cause burning or blindness. Reactive products have resulted in fumes that sent workers to the hospital. Garbage usually goes to landfills or dumps. Workers at these places have been injured in the same way.

BURIAL

Products dumped on weeds or buried in a hole in the ground can sink into the soil and cause both soil and groundwater to be contaminated (dirtied).

BURNING

Burning products or wastes is also known as incineration. Incineration can sometimes result in air pollution. Many items are explosive and there are many stories of people being injured when they burn their garbage.

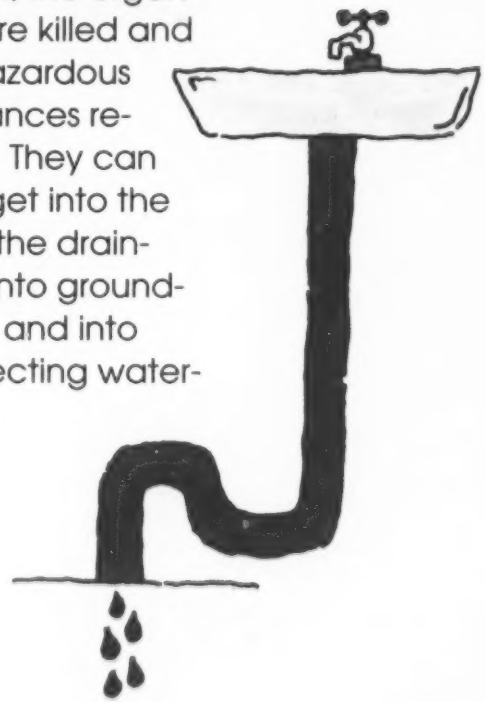
STORING ITEMS

Storing products indefinitely can be an invitation to an accident. Small children can be exposed to the products. Firefighters have been injured by a variety of household products when responding to fires.

DOWN THE SINK OR TOILET

When you pour something down a sink or flush it down the toilet, the water and the product go to the sewer or to a septic system. The sewers are a system of underground pipes that collect waste from each house, hotel, store, office building and factory. They bring it all together into huge pipes at a sewage treatment plant.

If your house is not hooked up to a sewer system, it has a septic tank. A septic tank is a large underground concrete container hooked to fields where water drains. It is like a small sewage treatment plant. In both cases, the waste is broken down (decomposed) by small organisms. If pollutants enter the system, the organisms are killed and the hazardous substances remain. They can then get into the soil in the drainfield, into groundwater and into connecting waterways.



INTO A STORM DRAIN

A storm drain is the metal grate at the sides or curbs of streets. Underneath the grate is a catch basin which catches the rain that runs into the drain. Anything that is poured into a gutter, into a backyard or on a driveway can go with the rain or sprinkler water into the drain. Storm drains are hooked up to pipes that go to creeks, rivers and lakes. In some areas, the pipes join up with the sanitary sewage pipes and go to the sewage treatment plant.

QUIZ TIME

Answer the following questions concerning hazardous household products:

1. Who can become injured if you throw your hazardous household products in the trash before they are empty?

2. Where do hazardous chemicals go if they are buried in the ground?

3. What is sometimes caused by burning products that contain hazardous substances?

4. Who might be in danger if household products are stored for a long period of time in the garage or on storage shelves?

5. Where does anything go if you pour it down the sink, flush it down the toilet or put it in a storm drain?

ACTIVITY 1

THE THREE R'S

There is more we can do with hazardous household products than throw them away. Many things we toss into the trash can be reused, reduced or recycled. These are called the THREE R'S.

REUSE

Give the leftover pesticides or paint to a school or church; they will use it up safely and then throw the can away.

REDUCE

Use fewer hazardous household products. A general household cleaner can work in many places. You don't need a different cleaner for each kind of dirt or cleaning problem.

RECYCLE

Help your family recycle used motor oil, brake and transmission fluids, water-based latex paints and car batteries, in addition to your other recyclables (newspapers, aluminum, glass, plastic and cardboard).

DO SOME ART

M ake a poster, bumper sticker or cartoon about the THREE R'S. At your next group meeting, share it with other members. Share it with your family.

ACTIVITY 2

ACTIVITY 2

DO SOME ART

DO SOME ART

ACTIVITY 2

ACTIVITY 3

RECYCLE YOUR TRASH

Many communities have recycling centers for common solid waste items (newspaper, aluminum cans, glass, plastic bottles and cardboard). Some of these recycling centers will also accept household hazardous waste that you need to get rid of. Your activity: call your local recycling center and ask them what items will they accept? List items here:

_____

_____

_____

_____

_____

COLLECTION DAYS

Some communities have set up collection days or places just for those hazardous household items that you no longer want or need. These are called HOUSEHOLD HAZARDOUS WASTE COLLECTION EVENTS. These places are usually staffed by people who are trained in hazardous materials. These people usually work for the fire department, the health department, the public works department or another agency.

ACTIVITY 4

LET YOUR FINGERS DO SOME WALKING

Open up the white pages of your telephone book. Go to the Government section in the front. Look under COUNTY and find the listing for the HEALTH DEPARTMENT. During normal business hours call the office and ask them if the health department manages household hazardous waste collection events. If they say no, ask them who does do that in your community. Write their answer here.

_____

_____

_____

_____

_____

_____

PREVENT POLLUTION

Our land and our water becomes polluted in many ways. The oil and grease that are washed from cars often ends up in storm drains and then in streams and rivers. Pesticides are often washed off from farmers' fields. Waste water from industries is sometimes discharged directly into streams.

Knowing this, try to answer the following questions:

1. If there was an oil leak from a car in your driveway, where would the oil go?

2. If there is an oil spill in the ocean, are birds and other wildlife going to be injured or die?

ACTIVITY 6

HAZARDOUS SCRAPBOOK

Look for newspaper articles in your local paper and in magazines. Cut out the headlines, photos or comics that relate to hazardous materials. Paste them on the scrapbook pages.

Below each article write one sentence about the correct disposal method that should have been

HAZARDOUS SCRAPBOOK ITEMS

ACTIVITY 6

Don't forget to add the disposal information!

ACTIVITY 6

HAZARDOUS SCRAPBOOK ITEMS

HAZARDOUS SCRAPBOOK ITEMS

ACTIVITY 6

ACTIVITY 7

WHAT HAVE WE LEARNED?

Answer the following questions about this section.

1. TRUE OR FALSE? Dumping hazardous household products down the toilet is a correct disposal method.

2. Name the THREE R's that can lessen the disposal problem.

3. Name three items that can be taken to a household hazardous waste collection event.

4. TRUE OR FALSE? You can do something about the hazardous waste problem.

SECTION

4

SAFER ALTERNATIVES TO HAZARDOUS HOUSEHOLD PRODUCTS

Compare And Contrast

Most people are unaware that there are safer alternatives that can be used in place of many potentially hazardous products. This section will show you some of the suggested alternatives, and how easily they can be used in your household.

NON-HAZARDOUS ALTERNATIVES

The following is a list of safer substitutes for some household toxics. Generally, the products can be bought in grocery stores.

Aerosol Sprays
- Aerosols should not be used at all!
- Use non-aerosol, pump-type sprays.

Ant Control
- Sprinkle cream of tartar in front of the ants path. Ants will not cross over. Cream of tartar is a substance used in baking. Look in the kitchen cupboard.
- Try red chili pepper, salt, dried mint or sage in the ant's path.
- Mix 1 tablespoon borax, 1 tablespoon sugar and 2 tablespoons of water to make a thick syrup. Soak cottonballs in the mixture and put the cottonballs on low lids or something flat. Put the lids in the middle of the ant colony.

Bug Spray
- Place screens on windows and doors.
- Brewers yeast tablets taken daily give the skin a scent that mosquitoes seem to avoid.

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305

NON-HAZARDOUS ALTERNATIVES

Chemical Fertilizers
- Compost.
- Mulch.
- Dried coffee grounds, bone meal and wood ashes.

Copper Cleaner
- Pour vinegar and salt over copper and rub.

Deodorizers / Air Fresheners
- Simmer cinnamon and cloves.
- Set out a dish of hot vinegar.
- Burn scented candles.
- Baking soda is good for odors in the refrigerator, cat box, drains and ash trays.

Detergents (Laundry and Dishwashing)
- For dishes, use baking soda and liquid soap.
- For laundry, use borax, washing soda or liquid soap.

Drain Openers
- Pour boiling water down the drain. Do this every week for preventive maintenance.
- Use a plumber's helper (plunger) or a plumber's snake.

NON-HAZARDOUS ALTERNATIVES

Flea Repellant
- Feed pets brewer's yeast, vitamin B or garlic tablets (not a lot!)
- Use eucalyptus leaves and seeds around the pet's bed.

Furniture Polish
- Mix lemon juice and vegetable oil.
- Mix vegetable oil and white vinegar.

Glass and Window Cleaners
- Use cornstarch and water.
- Mix 1/2 cup vinegar and one quart warm water. Wipe with newspapers.
- Use lemon juice and dry with a soft cloth.

Oven Cleaners
- Mix 3 tablespoons of washing soda with one quart of warm water.
- Place liners in oven to catch any drips during baking.
- Sprinkle salt on spills when they are warm and then scrub.
- Rub spills gently with steel wool.

NON-HAZARDOUS ALTERNATIVES

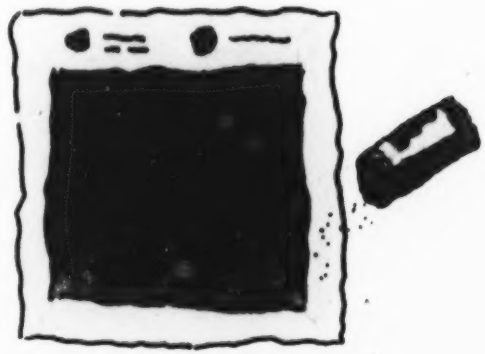
Oil or Solvent Based Paint
- Water based paints are less toxic than oil or solvent based. After using them, no solvent is necessary for "cleanup".

Rat and Mouse Poison
- Use mechanical snap mousetraps.

Rug and Upholstery Cleaners
- For spills, clean with club soda and clean cloth.

Scouring Powders (Abrasive Cleaners)
- Use baking soda or borax with a damp cloth.
- Scrub area with 1/2 lemon dipped in borax.

Snail / Slug Bait
- Place a shallow pan with beer in the infested area.
- Overturn claypots. The snails will take shelter in them during the sunny days and they can be collected and removed.



ACTIVITY 1

COMPARE AND CONTRAST

In this activity, you get to compare safer substitutes to a product your household typically uses. Examples of these common products are: glass cleaner, snail bait, furniture polish and drain cleaner.

Pick two products that are normally used in your house. Find their safer substitute(s) on pages 56 - 59.

Ask an adult for permission to use the alternatives for 2 weeks. Complete the charts for the two products you selected. Fill in the blanks on pages 61 and 62.

You will be keeping track of:

1. Which product worked better (how efficient was it at doing its job)?
2. The cost of each product.
3. How easy is it to find the products in stores?
4. How are the products disposed?

313

312

COMPARE AND CONTRAST CHART

TYPICAL PRODUCT
Product:
Cost:
Where was it bought?
How efficient was it? (Circle one) Very Moderate Not at all
Safety Tips:
How do you dispose of it?

SAFE SUBSTITUTE
Product:
Cost:
Where was it bought?
How efficient was it? (Circle one) Very Moderate Not at all
Safety Tips:
How do you dispose of it?

ACTIVITY 1

ACTIVITY 1

COMPARE AND CONTRAST CHART

TYPICAL PRODUCT
Product:
Cost:
Where was it bought?
How efficient was it? (Circle one) Very Moderate Not at all
Safety Tips:
How do you dispose of it?

316

SAFE SUBSTITUTE
Product:
Cost:
Where was it bought?
How efficient was it? (Circle one) Very Moderate Not at all
Safety Tips:
How do you dispose of it?

317

SHOW OFF YOUR SMARTS

Show the Compare and Contrast Chart to the person who normally uses that potentially hazardous household product. Ask them if they are willing to switch to the safer substitute.

ACTIVITY 2

ACTIVITY 3

CUT AND PASTE

Make a collage of common products and their safer alternatives. Use pictures from newspapers and magazines and your own drawings.

320

321

CREATE YOUR ART HERE!

ACTIVITY 3

322

323

ACTIVITY 4

MEDIA STAR

Pretend you are working for a television station, radio station or magazine. Write or draw an advertisement for a safer alternative.

CREATE YOUR ART HERE!

CREATE YOUR ART HERE!

ACTIVITY 4

326

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ACTIVITY 4

CREATE YOUR ART HERE!

CHECK YOUR HAZARDOUS HOUSEHOLD PRODUCT IQ

ACTIVITY 5

Answer the following questions about safer substitutes:

1. List two household products and their safer substitutes.

   _____ _____

   _____ _____

2. TRUE OR FALSE? Brewers yeast can take the place of bug spray.

3. A clogged drain can be cleared with a

   _____ or a _____

4. TRUE OR FALSE? Safer substitutes have less of a chance to harm you or the environment.

ACTIVITY 6

WORD HUNT

Find the words in the maze. They may be in any direction.

ALTERNATIVE
BIODEGRADABLE
CHOICE
COMPARISON
COST
DISPOSAL
PRODUCT
SAFER
VINEGAR
WASHING SODA

W	A	S	H	I	N	G	S	O	D	A	G	O	C	F	V
A	T	O	B	N	L	C	E	S	D	O	P	S	O	B	I
U	C	H	O	I	C	E	O	O	N	X	T	A	M	L	N
T	U	I	O	K	M	A	H	S	O	B	L	F	P	A	E
I	D	A	L	T	E	R	N	A	T	I	V	E	A	S	G
O	O	A	F	R	A	M	M	A	B	O	E	R	R	O	A
N	R	M	O	Y	Z	E	D	I	E	N	T	S	I	P	R
W	P	S	T	G	G	L	T	N	O	R	M	I	S	S	E
F	O	E	L	B	A	E	D	A	R	G	E	D	O	I	B
L	H	O	M	N	C	R	P	E	R	T	U	V	N	D	M

SECTION

5

EVALUATE YOUR EXPERTISE

You have now toured your home, the garage, and other storage areas and become acquainted with hazardous items. You know that hazardous substances can harm you, your pets, and your environment. To prevent such injury you must use, store and dispose of the items safely. You have also seen some safer substitutes that you can use if you decide to make the switch.

Complete the last set of activities and be safe with hazardous household products in the future!

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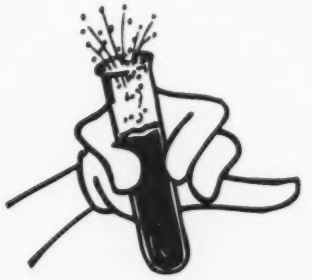
ACTIVITY 1

HOW IS IT HAZARDOUS



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Place an "**I**" if the object is IGNITABLE, "**C**" if it is CORROSIVE, "**R**" if it is REACTIVE, and "**T**" if it is TOXIC. Some items may need more than one letter.

_____ car battery

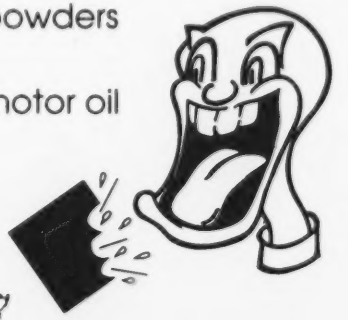
_____ unused drugs and medication

_____ chlorine and ammonia mixed together

_____ hair spray

_____ scouring powders

_____ motor oil



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FILL IN THE BLANKS

Materials that can cause harm to you or the environment are

_____

The three "R"s are

_____

_____

_____

ACTIVITY 2

ACTIVITY 3

FILL IN THE BLANKS

How can hazardous waste be safely disposed?

_____

_____

_____

Name three advantages of using safer substitutes.

_____

_____

_____

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YOUR LAST QUIZ

Match the correct word with the definition.

a. reactive
b. poison control centers
c. incineration
d. dispose
e. recycle

_____ To throw something away
_____ To burn something
_____ Processing used material into new products
_____ Facilities with experts to answer questions about hazardous substances
_____ Something that can catch fire, explode, or give off dangerous fumes

ACTIVITY 4

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